ENGINEERING NEWS-RECORD

Stone-faced sandwich panels make debut *p. 35*

A McGRAW-HILL PUBLICATION

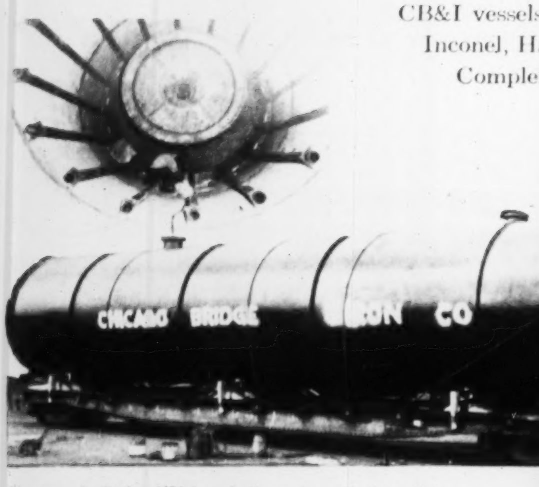
Left: 12-ft. O.D. by 43-ft. 4-in. digester with 316 E.L.C. Hortonclad. Inset: Interior of vessel built for Hudson Pulp and Paper Company at Palatka, Florida.

HORTONCLAD and CB&I VESSELS

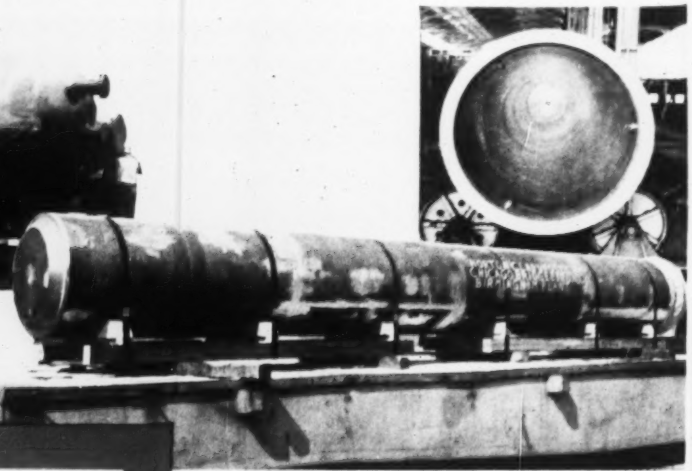
High Vacuum Brazing Process Assures Uniform Thickness of Clad Layer

Hortonclad®, available only with CB&I process and storage vessels, is a composite metal having an integral and continuous bond produced by a high vacuum brazing process. Uniform thickness is assured as the alloy cladding and the backing are in their final thickness before bonding. Hortonclad meets all ASME boiler code and API-ASME Unfired Pressure Vessel Code requirements.

CB&I vessels can be fabricated using Hortonclad plates with silver, monel, Inconel, Hastaloy, stainless and a wide variety of other metals and alloys. Complete information on Hortonclad and its use with CB&I vessels may be obtained by writing our nearest office.



Above: A 36-ft. $9\frac{13}{16}$-in. shell section of this 43-ft. reactor has type 405 stainless steel Hortonclad. Inset: View inside of reactor supplied to the Derby Oil and Gas Co., Wichita, Kansas, through the Fluor Corp.



Above: $37\frac{1}{4}$-in. O.D. by 24-ft. $10\frac{5}{8}$-in. urea autoclave liner with fine silver Hortonclad. Inset: View of interior.

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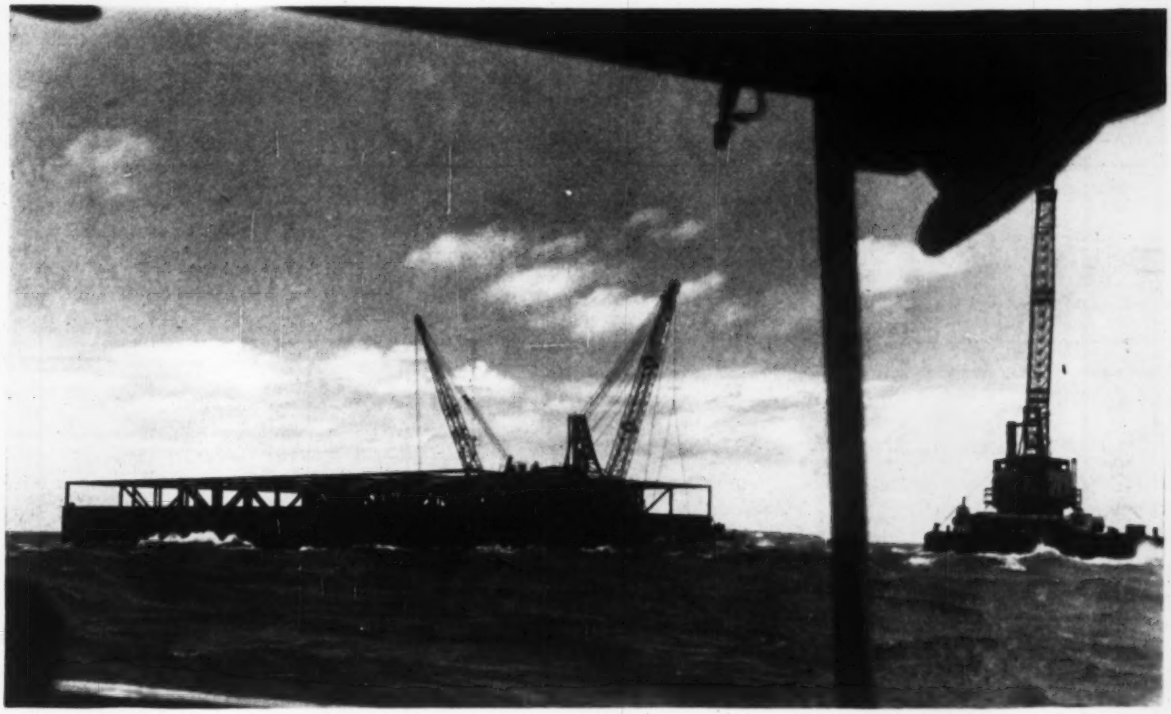


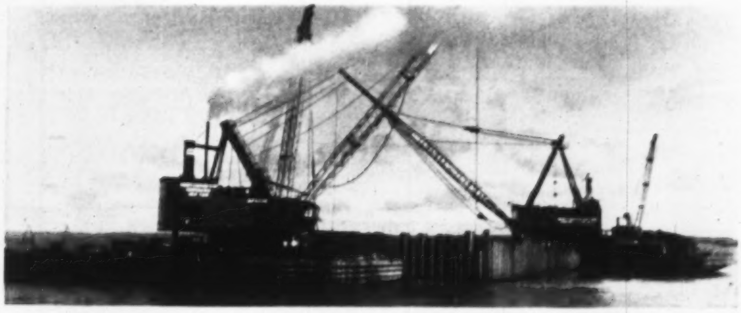
Largest sheet-piling cofferdam was for pier No. 22 which, when completed, contained 85,000 cu yd of concrete. Piling contractor was Merritt-Chapman & Scott Corp., New York City. *Bridge owner:* Mackinac Bridge Authority.

Rough Water, Adverse Weather Marked Placing of Cofferdams for Mackinac Bridge Piers

Together with the approaches the Mackinac Bridge, now under construction, will be approximately five miles long. It will cross the Straits of Mackinac, four miles of open water between St. Ignace and Mackinac City in northern Michigan. The straits vary in depth from only a few feet to nearly 300 ft and are characterized by strong currents and are subject to severe weather conditions. As a result, construction of the piers for the Mackinac Bridge was an unusually difficult operation.

Of the 33 water piers for the bridge, 30 were built in open cofferdams, either rectangular or circular, constructed with Bethlehem steel sheet-piling, internally braced with steel frames. For the rectangular cofferdams, Z-pile section ZP27 was used, the maximum depth to rock being 101 ft below water level for one of the piers. Straight-web sheet-piling SP6a was used for the circular piers, the sheet-piling being driven to a maximum depth of 99 ft below water level in one cofferdam. The remaining three water piers were built in open-dredged caissons.

All sheet-piling for cofferdams was left in place to add permanence to the concrete. At the two anchorage piers, the piling was cut off at El + 10 ft, to serve as armor against abrasion by ice. Bethlehem supplied a total of over 5000 tons of steel sheet-piling for the construction of the Mackinac Bridge piers.



Dredging overburden from anchorage pier. Here sheet-piling was cut off at El + 10 ft to allow piling to act as armor against abrasion by ice.

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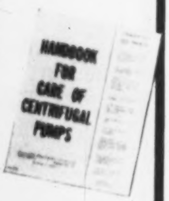

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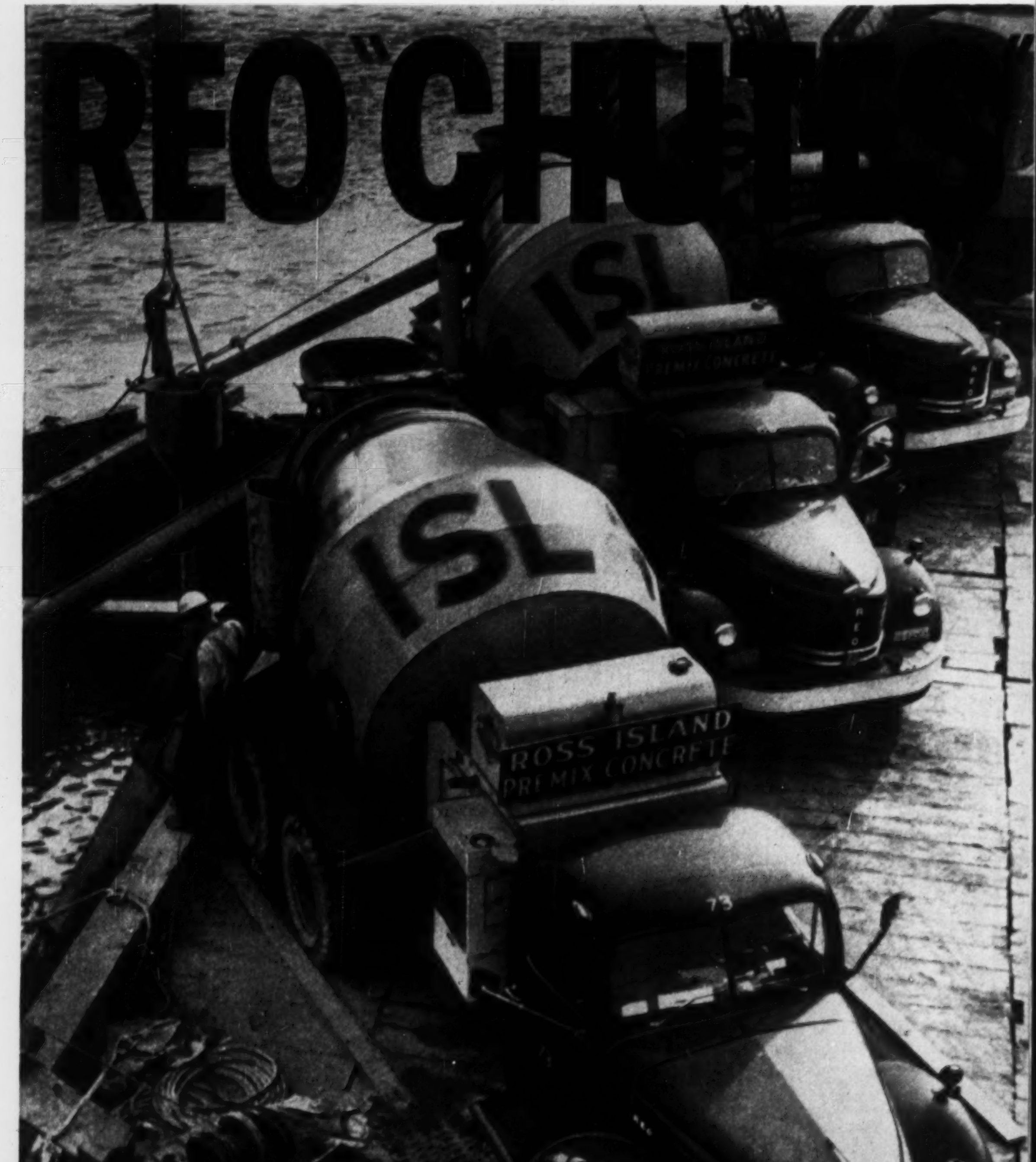
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PHOTO COURTESY CONSTRUCTION METHODS AND EQUIPMENT MAGAZINE

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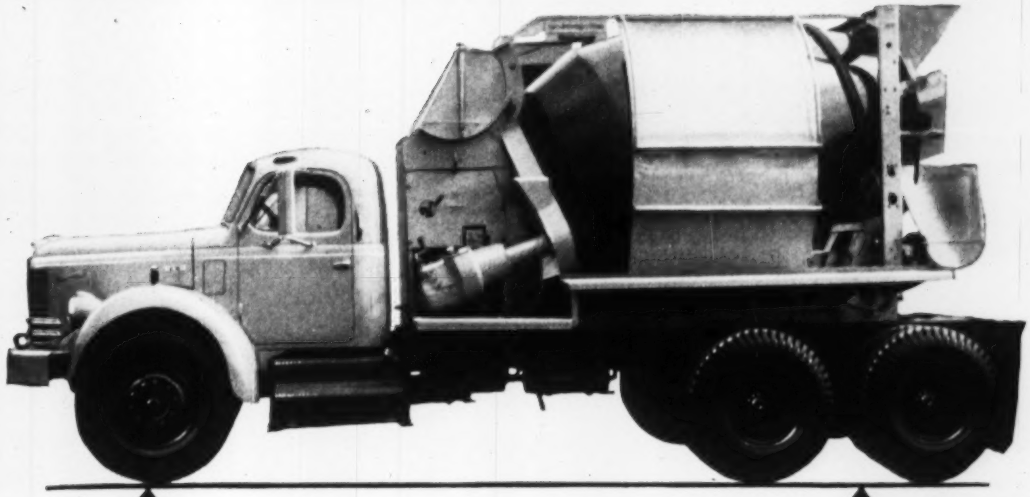
6½ yds. within 32,000 lb. tandem limit



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Reader Comment

"Raid" Dreamed Up

Sir—Your July 5 issue concerning new buildings in industry was most informative and extremely interesting.

However, there is one point that disturbed me somewhat. I have heard certain distressing rumors circulating the country concerning the extensive proselyting of engineers by various firms. However, the new connection you have for me is a "raid" that has not transpired.

As you know, I have been with Walter Kidde Constructors, Inc., for nearly four years. I was recently elected a vice president. I am very happy here and intend to remain as long as Walter Kidde Constructors, Inc., can put up with me.

F. L. Whitney
Vice President
Walter Kidde Constructors, Inc.
New York, N. Y.

[Editor's Note—We incorrectly identified Mr. Whitney as vice president of another company (ENR July 5, p. 58).]

Who's Who at Garrison

Sir—The picture and caption entitled "Finishing Touches Given to Garrison Dam" (ENR July 19, 1956 p 23) give the impression that the project is being constructed by the Peter Kiewit-Morrison Knudsen joint venture. Active prime contractors working on the project include: Peter Kiewit-Morrison Knudsen on stilling basin paving; Kaiser-Perini-Walsh on powerhouse and switchyard; Southwest Welding & Mfg. Co. on penstocks and surge tanks; General Electric Co. on generators; and Bradbury Construction Co. on roadway paving.

John R. Bargas
Project Manager
Kaiser-Perini-Walsh
Riverdale, N. D.

CALENDAR

Illuminating Engineering Society, annual technical conference and fiftieth anniversary celebration, Statler Hotel, Boston, Mass., Sept. 17-21.

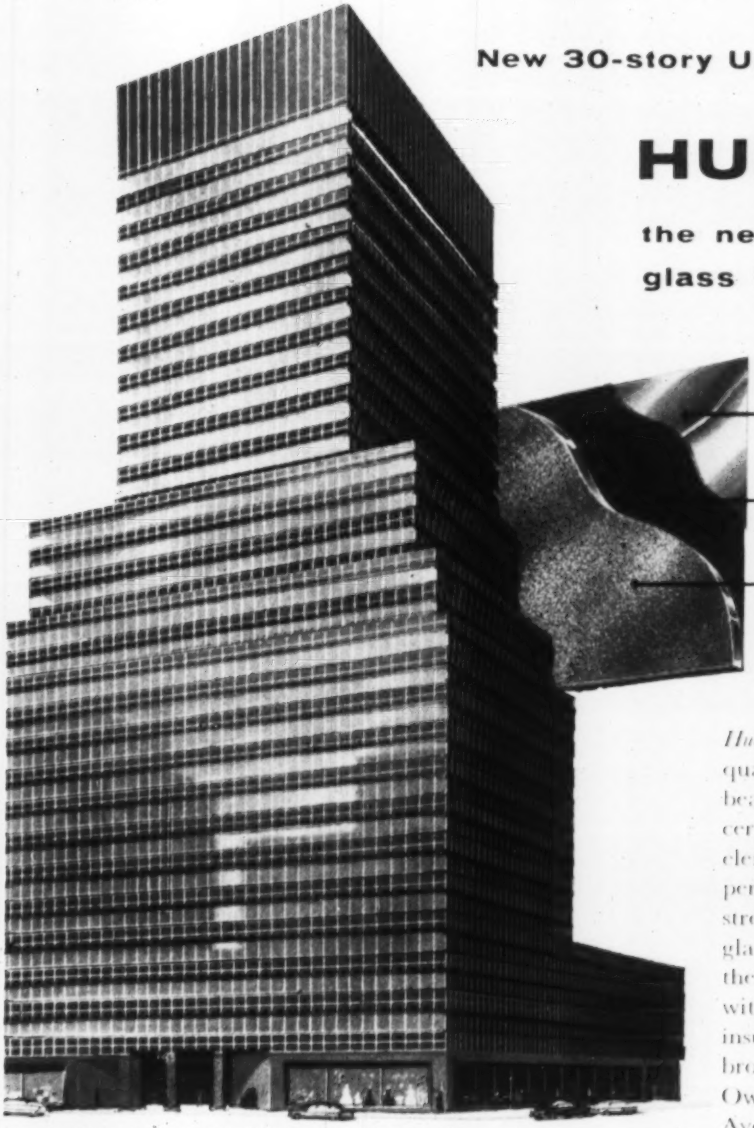
Building Research Institute, Modern Masonry Conference, Hall of Flags, U. S. Chamber of Commerce Bldg., 1615 H St. N.W., Washington, D. C., Sept. 19-20.

Noise Abatement Symposium, seventh annual meeting, Hotel Sherman, Chicago, Ill., Oct. 11-12.

Sixth Annual Drilling Symposium, The University of Minnesota, Minn., October 11, 12, 13, 1956.

Rail Steel Bar Association, fall meeting, Sheraton-Mount Royal Hotel, Montreal, Canada, Oct. 15-16.

Society for Experimental Stress Analysis, annual meeting and exhibit, Deshler-Hilton Hotel, Columbus, Ohio, Nov. 1-2.



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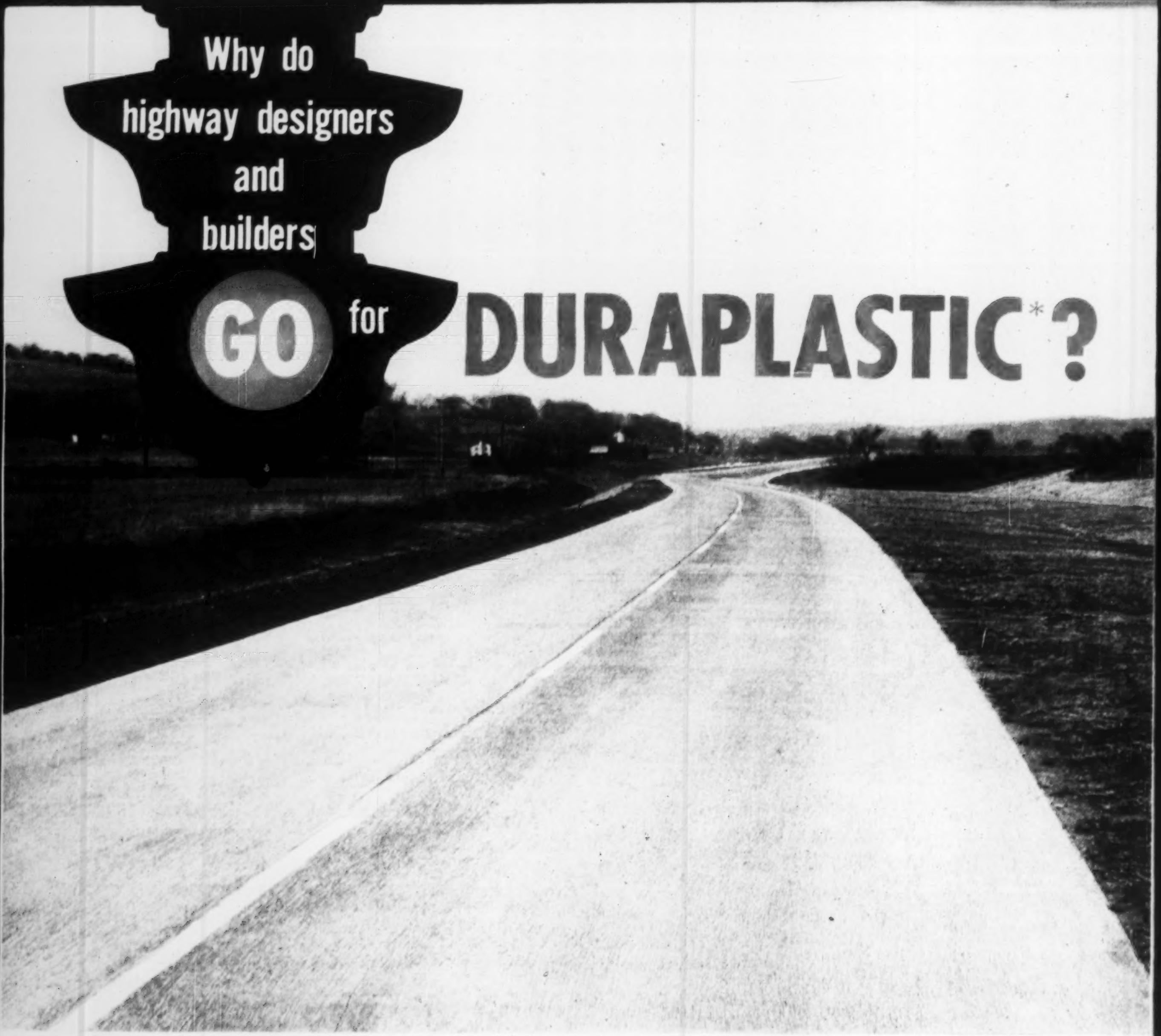

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Wide bowl-opening on Rear-Dump provides easy entry, big target for shovel, dragline, or conveyor loader. Units come in 11, 22, and 35-ton capacities.

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Hauls to overburden dump are made at speeds up to 32 mph by this C Rear-Dump.

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beat mud problem

A Canadian company had the problem of stripping 30 to 75-ft. layer of wet clay out of rock pockets. Soft and sticky with trapped-in moisture, this overburden was loaded by draglines, and hauled half a mile to waste dumps. Four C Tournapull Rear-Dumps were used to speed hauling.

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As owners everywhere have found, Tournapull Rear-Dumps go through mud which stops conventional truck-type haulers. On this overburden job, for example, these Rear-Dumps worked out of deep mud-holes in the pit and off dumps so soft a man could not walk through them. The exceptional mud-ability they showed is due partly to traction of big 21.00 x 25 low-pressure tires . . . partly to electric power-steer through geared kingpin which "walks" Tournapulls out of trouble . . . partly to exclusive differential which *automatically* transfers power from slipping wheel to wheel on firmer footing.

On rough haul-roads, Rear-Dumps with 5′6″ diameter tires haul faster than trucks. The big tires grip and roll over the bumps, cushion machinery and operator from road shocks.

Turn around non-stop

These Rear-Dumps also work faster and with greater safety in narrow quarters than conventional haulers. They turn around in much less space. When bowl is raised, they shorten wheel-base to turn non-stop in an area about 1/3 less their overall length. This maneuverability speeds haul on narrow roads, reduces spotting time at shovel and dumps.

Dump fast and clean

Practically no clean-up is needed on the dump. With front-wheel drive, Rear-Dumps back safely to edge of bank. Bowl swings behind and below rear wheels . . . loads fall free and clear over the edge, with little spillage, seldom call for clean-up.

Ask your LeTourneau-Westinghouse Distributor to show you first-hand how Rear-Dump advantages can pay off on your work.

Rear-Dumps now available
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LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS
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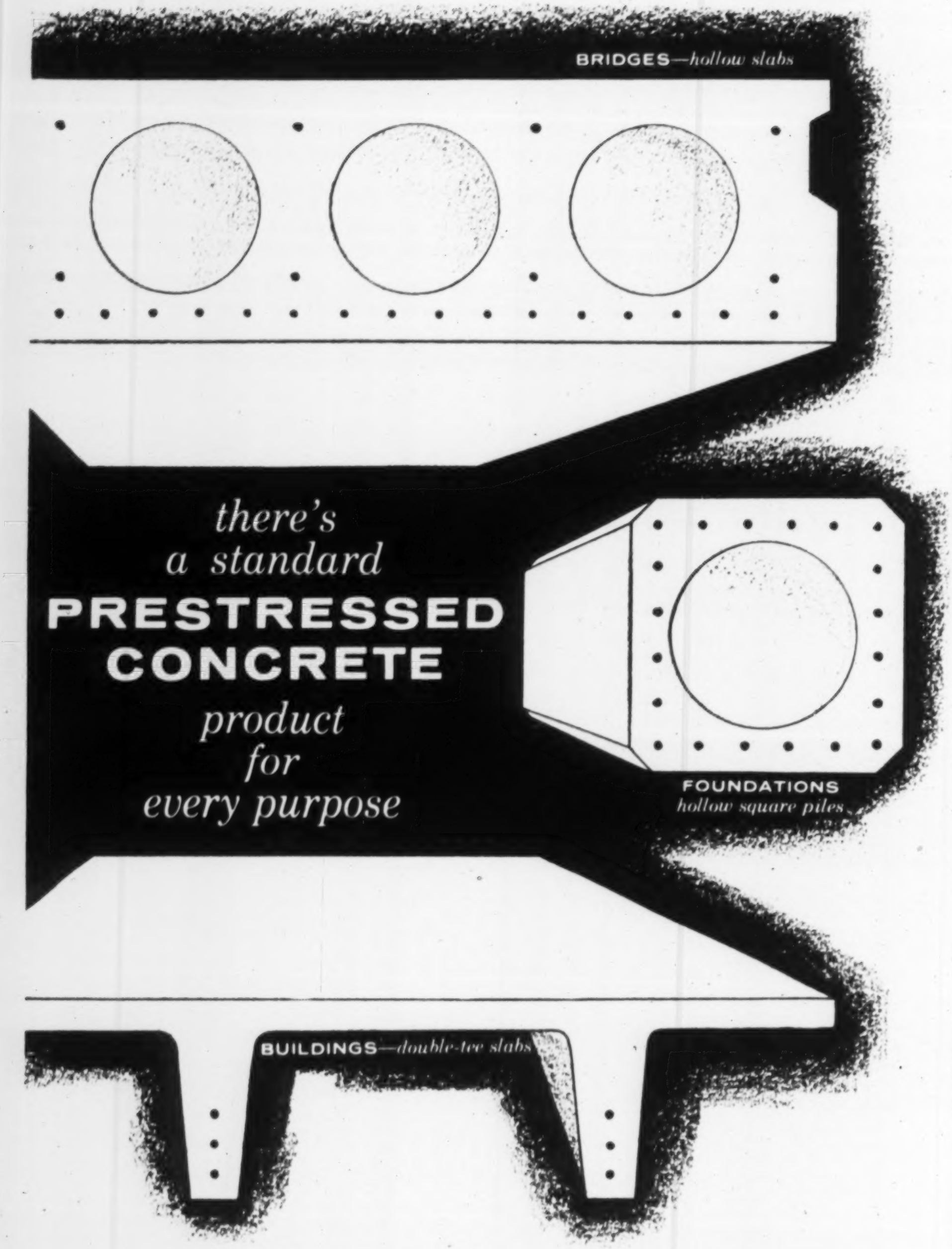
ARBA See you at the ROAD SHOW • Chicago • January 28-February 2, 1957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Precast Concrete Limited
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Pretens, Inc.
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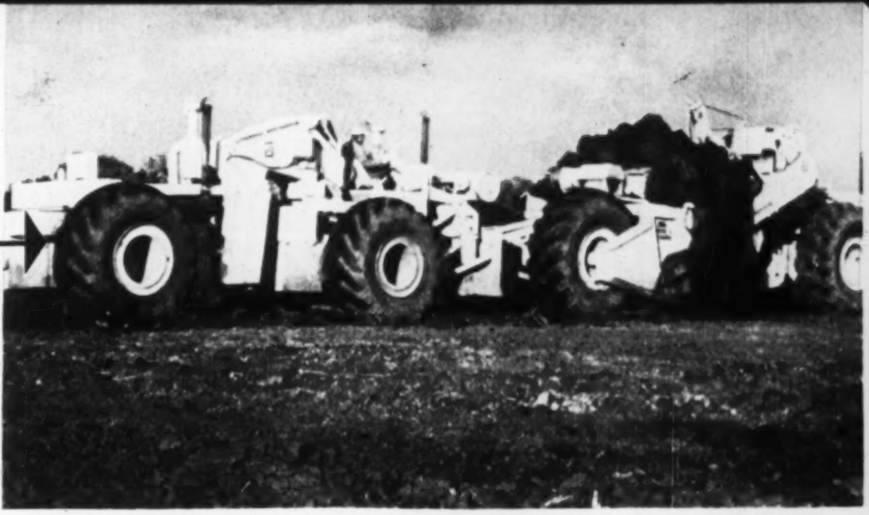
Want more POWER

for faster scraper loading?



At work on a roadbuilding job in Kansas, Twin-C tractor push-loads B Tournapull with heaped load of sticky gumbo in ½ minute in short loading distance. With powerful 416 hp "Twin-C" behind it, 'Pull's scraper blade easily digs in, carves out tough material.

The best answer to today's need for more effective push-power behind your scrapers is the new 4-wheel drive, twin-engine Twin-C tractor. Highly maneuverable, this giant 416 hp rubber-tired tractor positions fast. One-man with "Twin-C" piles heaping loads in your biggest production scrapers in a hurry ...often eliminates need for tandem pushers.

Prime factors in rig's exceptional pushing production are its 416 horses, driving 40 tons of machine through 4-wheel drive traction and tires 2½′ wide and over 7′ high.

Twin engines, drive trains, boost push-power

Two independent drive trains, powered by two synchronized 208 hp GM Diesel engines, each have low-pressure, trouble-free torque converters to provide an infinite ratio of speed ranges. These converters automatically transform engine power into most efficient ratio of pulling power and speed to fit your changing demands in the cut. As a result, "Twin-C" delivers maximum drawbar pull, maintains strong, constant contact between pusher and scraper — regardless of scraper loading-speed, material, or underfoot conditions. Recent Dynamometer tests, made in sandy clay footing, with optimum moisture content, showed "Twin-C" registers an *actual* 65,900-lb. drawbar pull in 1st gear!

Power-transfer differentials add tractive power

For best ground-gripping traction in sand, mud, or other loose materials, big-tired "Twin-C" is equipped with 2 exclusive power-transfer differentials — one for each pair of drive-wheels. These differentials automatically transfer power from slipping wheel to wheel on firmest footing . . . keep pusher driving ahead when going is tough.

"Twin-C" . . . easy to control

Simple fingertip electric controls on "Twin-C" respond instantly in any weather. They provide positive power-steer . . . power-positioning of sturdy, concave push-plate. Operator smoothly applies massive pushing power as he spots big (49½″ x 88″) floating push-plate behind scraper push-block . . . always gives you fast, profitable scraper-loading.

Fast positioning speeds work cycle

Rubber-tired speeds, geared king-pin power-steering, and synchronized constant-mesh transmissions make the "Twin-C" very maneuverable in the cut. Fast forward speeds, to 20 mph, plus easy maneuverability, let tractor operator position fast behind scraper. With power-steer and high reverse speeds, rig loses no time backing up and getting into position for push-loading the next scraper.

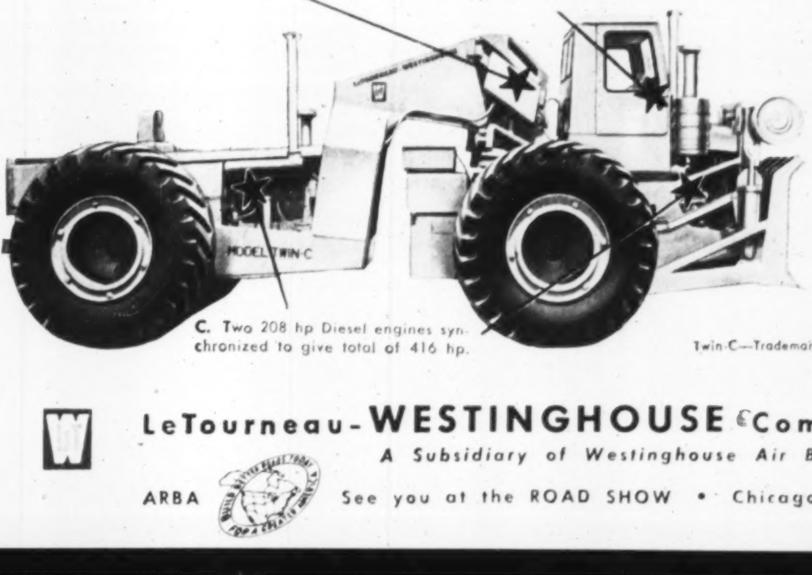
Constant-mesh transmissions give any gear ratio instantly. With gears always in mesh, you eliminate delays in changing gears . . . save vital momentum, reduce costly "lug downs" and gear changes that slow down other pushers. "Twin-C's" power, speed and mobility prevent loading delays.

King-sized pushing power for your fleet

If your fleet includes production scrapers of any kind, you will want more information on the powerful, big-capacity LeTourneau-Westinghouse Twin-C tractor. This revolutionary new pusher will increase the length of your work season . . . keep your dirtmoving cycles rolling for better profits. Call or write for more complete details.

A. Geared king-pin power steering.

B. One operator using push-button control perfectly matches direction, power, and speed of scraper.



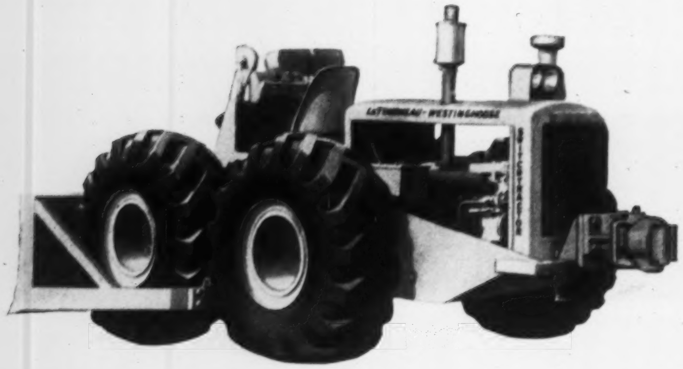
C. Two 208 hp Diesel engines synchronized to give total of 416 hp.

Twin-C—Trademark, Tournapull—Trademark Reg. U.S. Pat. Off. TW 1095 G b

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

ARBA See you at the ROAD SHOW • Chicago • January 28-February 2, 1957



new switch for old rig!

SwitchTractor

Now . . . time-tested Tournatractor

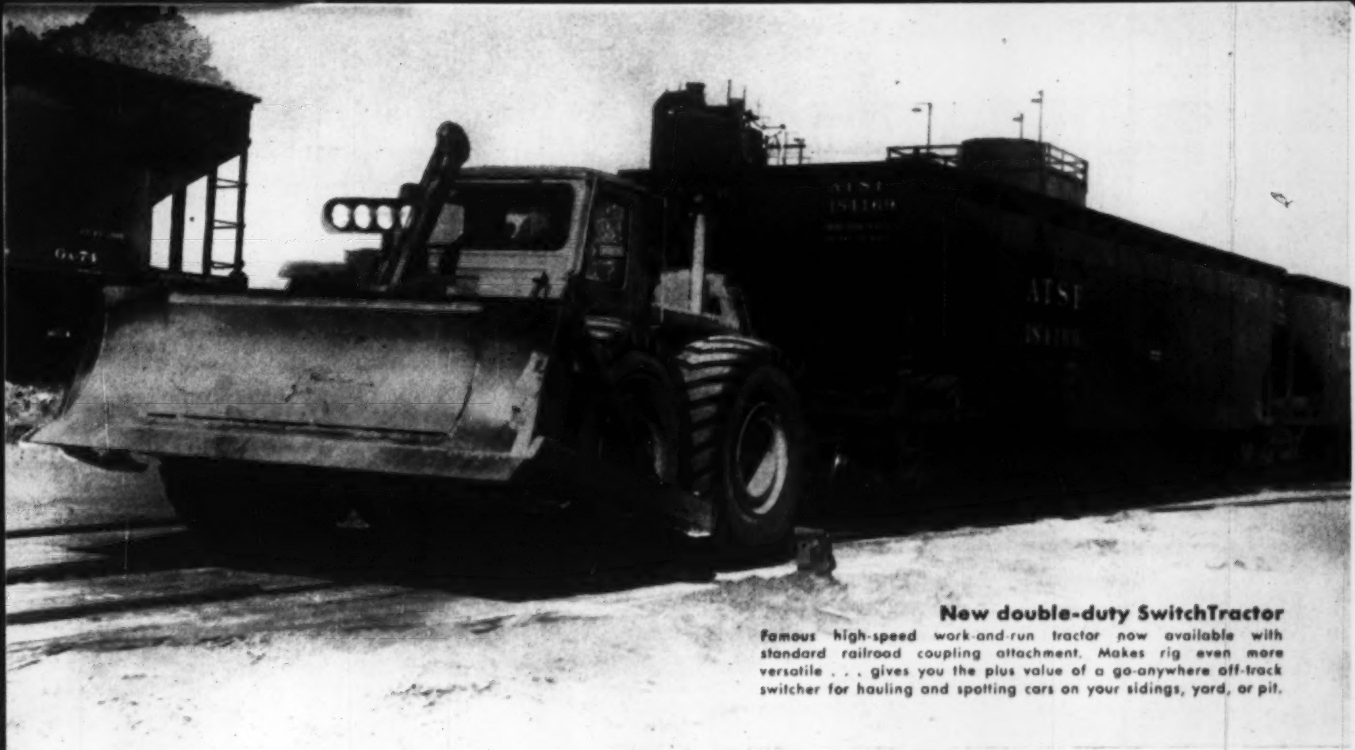
When not needed for spotting or hauling rail-cars, fast-moving, double-duty SwitchTractor drives anywhere around pit or plant on dozing, maintenance, and clean-up chores.

Ten years' hard use has improved and perfected the fast, rubber-tired performance of this work-and-run Tournatractor. Thousands of these machines have proved their value in dozing, hauling, pushing, grading, scarifying, compacting, and snowplowing in practically every country of the world. Each year has seen many major improvements. Wherever speed and maneuverability are needed, these fast-moving rigs have given outstanding service.

Doubles value of Tournatractor

Now — with new *SwitchTractor* application — this versatile unit gives you added utility. Equipped with a standard railway coupler at the rear, SwitchTractor does double-duty on your location . . . switches freight cars on your siding, yard, or pit at a moment's notice. Rig has plenty of power and traction to pull and spot long trains of cars as needed, saving time and money.

SwitchTractor often eliminates the need for maintaining private switch engines and engineers . . . saves charges and delays for RR switch service. Your single SwitchTractor and operator may well handle all your scattered tractor-dozer work — plus whatever freight-



New double-duty SwitchTractor

Famous high-speed work-and-run tractor now available with standard railroad coupling attachment. Makes rig even more versatile . . . gives you the plus value of a go-anywhere off-track switcher for hauling and spotting cars on your sidings, yard, or pit.

also spots and switches freight cars

car switching is required! Highly maneuverable in close quarters, unit turns around in its own length.

Off-track travel cuts switching time

SwitchTractor gives you several important advantages. Rolling on big, low-pressure rubber tires, this go-anywhere rig always takes the shortest route to every switching or hauling assignment. No matter where it happens to be working, unit easily highballs across yards, fields, tracks, ties, ditches, embankments to its next assignment — without damage to machine or roadbed. In hauling cars, it straddles tracks . . . does not chamfer ties or damage switches.

Depending on the distance and number of cars to be spotted or hauled, SwitchTractor can either push (with its dozer or push-plate), or pull with its drawbar. Coupling to cars with drawbar at rear takes but a moment. Coupler is safe, sturdy, standard RR type.

60% vs 30% coefficient of friction

Rolling on big rubber tires over ballast and ties, instead of with steel wheels on steel rails, SwitchTractor develops much more coefficient of friction (60% compared to 30%) than track locomotives of *twice* its weight. That means you have plenty of tractive power for fast starts and stiff rail grades in hauling cars. When not needed for handling cars on your pit or yard tracks, SwitchTractor keeps working productively for you as a dozer or towing tractor.

Worthwhile savings with SwitchTractor

If you have freight cars to move on your siding, yard, or pit, the added versatility of this new SwitchTractor will really pay off for you. Get all the facts on how this coupling-equipped go-anywhere tractor can save thousands of dollars for you in equipment investments and manpower economies. Phone or write us for details and a demonstration in handling *your* type of work.

SwitchTractor—Trademark, Tournatractor—Trademark Reg. U.S. Pat. Off. ST-1075-M

LeTourneau-WESTINGHOUSE Company

Peoria, Illinois

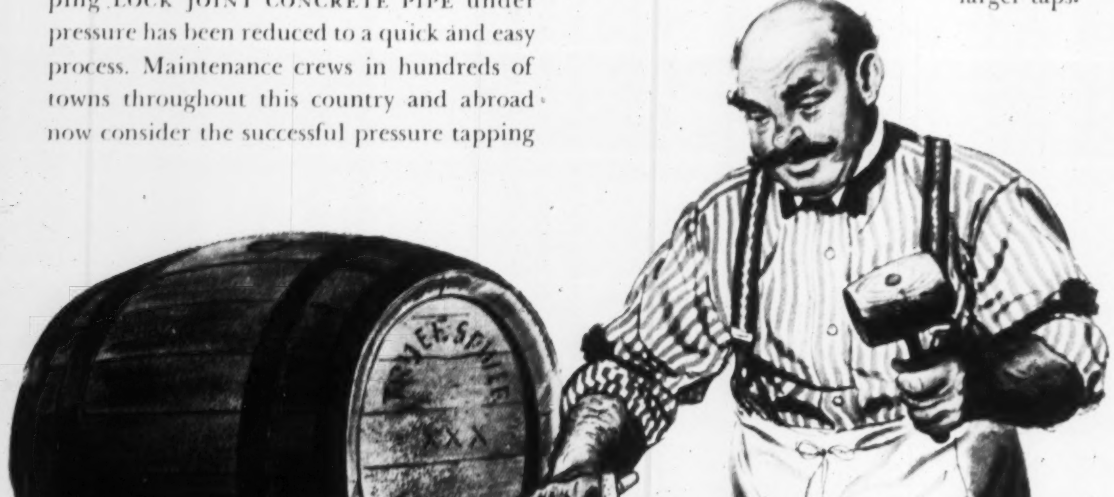
A Subsidiary of Westinghouse Air Brake Company

WHEN TAPPING WAS AN ART

Gone are the days when it took an unerring eye and a mighty wallop to tap a keg of beer. Gone, too, are the days when tapping concrete pipe under pressure was a complex, difficult operation.

Thanks to today's modern equipment, tapping LOCK JOINT CONCRETE PIPE under pressure has been reduced to a quick and easy process. Maintenance crews in hundreds of towns throughout this country and abroad now consider the successful pressure tapping of LOCK JOINT CONCRETE PIPE to be a normal part of the daily routine.

Upon request, we would be glad to send you our brochure covering the few simple steps required either for making service connections or for making larger taps.



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THE CONSTRUCTION WEEK

NEW RECORD FOR PRESTRESSED GIRDERS?—One result of the shortage of structural steel may be a new record span for prestressed concrete bridge girders. The Greater Hartford Bridge Authority, charged with erection of five bridges across the Connecticut River in the vicinity of Hartford, announced that one, scheduled for completion December 1957, will be prestressed concrete. Preliminary studies by Thomas Worcester & Co., Boston consulting engineers, indicate 10 to 15 spans of 120 to 172 ft. The largest span would exceed by 12 ft the present record for prestressed concrete girders held by the Walnut Lane Bridge, Philadelphia, Pa.

NO QUICK RELIEF FROM STEEL SHORTAGE—Though the mills are racing to restore full production, all major cities in the country report their structural steel supply as "short" or "very short." Deliveries are indefinite in Baltimore, Detroit, Kansas City and San Francisco. One large New York warehouse is unable to make deliveries on new orders before October. No new orders can be filled in Boston. The same supply rating applies to reinforcing steel, except in Cleveland, Dallas, Kansas City and Seattle. And, delivery time on reinforcing bars has increased in Baltimore, Boston, Cincinnati, Detroit and St. Louis.

ANYTHING BUT FLATTERING—Only the lawyer is of less importance to the community than the engineer in the opinion of 806 persons responding to a poll conducted by the Washington State Education Association. Aimed at determining the public's attitude toward teachers and schools, the survey showed 59% rating teachers as "most important to the community," ahead of clergymen, public officials, engineers and lawyers in that order. Engineers and teachers were ranked on a par as having the "least prestige."

THE UNDEFENDED BORDER—Despite the growing imbroglio over the Columbia River, relations between the U. S. and Canada concerning all other international waters continue sweet and enlightened. Last week, President Eisenhower vetoed a bill that authorized Chicago to divert another 1,000 cfs from Lake Michigan to better flush its sewage into the Illinois River. The Canadians objected to this additional appropriation and the President wished to keep the air clear pending settlement of the Chicago issue by the International Joint Commission.

PARKING SOLUTION—The Detroit Parking Association plans to use two freighters as parking lots during the Motor City's forthcoming Riverama celebration. The two vessels, normally used to ship cars to Great Lakes ports, will be out of service during the auto industry's shift to 1957 models. As floating parking lots, the vessels will accommodate at least 500 cars.

Here's why
Armco Drainage Structures
will carry your
HIGHEST FILLS

Two Armco MULTI-PLATE Pipes carry drainage through Ohio Turnpike's highest fill—108 ft. J. E. Greiner Co., Engineers; Howard, Needles, Tammen & Bergendoff, Contracting Engineers.

Fill height on this 102-inch structure will average 125 feet when completed. The installation is part of a realignment project on U. S. Route 2, Montana.

Modern highway construction calls for deep cut and high fill sections that were unheard of a few years ago. And the problem of drainage under these heavy fill loads is being solved more and more by durable Armco Corrugated Metal Structures. Here are some of the reasons why!

CORRUGATED METAL STRENGTH:
Armco Drainage Structures have the ability to flex under load and gain side support from the adjacent soil. The wide range of gages makes it easy to specify the strength you need.

STRONG JOINTS:
Bolted coupling bands make joints strong and tight. Soil movement or frost action won't disjoint the long pipe sections. Alignment stays good. With Armco MULTI-PLATE (large size structures that are assembled in the field from corrugated plates) the all-bolted construction makes one integral structure.

WITHSTANDS FOUNDATION SETTLEMENT:
With Armco Structures you can anticipate foundation settlement with a cambered design. The center portion is installed higher than the desired final flow line. As the foundation settles, the pipe adjusts to proper grade without affecting the joint strength.

Write us for complete, authoritative data on Armco Corrugated Metal Drainage Structures. There is a size and type for almost any job. Armco Drainage & Metal Products, Inc., 3056 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO Drainage Structures

ARMCO ®

WASHINGTON OBSERVER

New steel prices (page 133) are but one factor in an upward price trend.

Government statistics and the forecasts of economists point to new records ahead for the gross national product—now at a new high of $408 billion—but indicate that most of the increase will be attributed to higher, if not inflationary, price levels.

Housing is already feeling rising costs of materials and labor. The continuing slump (page 135) has the federal government concerned but not enough to go for a general easing of credit. Indeed, the Federal Reserve Board feels its tight money policy is needed more than ever to prevent rising prices from spiraling.

Only aid for housing in prospect is reduced downpayments for veterans. But even this measure is considered to be only a minor stimulus. Higher building costs and more expensive tastes of buyers have become a greater problem than downpayment.

•

Department of Agriculture won some new ground on flood control out of this session of Congress. Eisenhower signed amendments to the department's watershed protection authority passed back in 1954, so there's new freedom to plan, grant money and build small flood-control and water supply structures—and a boost in funds available to go along with the expansion of programs possible under the revised law. Agriculture's program is relatively small, compared to those of other agencies—but it bears watching; percentage-wise it's showing a terrific increase.

Money for building installations will be up 50% for fiscal year now just beginning—an estimated $12.5 million, compared with $8 million last year put into facilities. Balance is spent working up plans. Total money available this year is $17.5 million, up from last year's $12 million.

Smaller projects can be okayed without going to Congress under provisions of the new legislation; but structures that are over a given size or dollar cost must still be checked with other government agencies and committees of Congress.

Mandatory cost-sharing has been eliminated for flood-control structures; Agriculture can put up all the funds now. President Eisenhower criticized this provision when he signed the bill and will ask Congress to require local contributions.

Also, the department can help plan municipal and industrial water supply projects where there's no flood-control or agricultural benefit involved. On these projects, the law specifically provides that non-federal engineers must do the construction engineering work.

The new legislation is retroactive; the 26 or 27 projects now in the works at Agriculture's Soil Conservation Service—which runs the show—can benefit from the new amendments to the law.

•

Building trades scrap with industrial unions over who gets construction work inside industrial plants comes up again August 27. Two groups will take up the problem at Forest Park, Pa.: The Executive Council of the merged AFL-CIO meets then and so does the craft-industrial union joint committee working on solutions to the knotty jurisdictional problem that will be satisfactory to both groups.

New proposals have been drawn up by the industrial union members of the joint committee. They're being studied by the building trades and will be discussed at the meeting (ENR Aug. 9, p. 23).

Shovel-Crane owners!

Working a hard 8 hour day... getting only 6½ hrs. output?

Operator fatigue can cost you important money. Here's how to minimize it!

THINK about the job you're working now. How much *more* money could you make if operators—good as they are—suffered little if any end-of-the-shift-letdown . . . never had to climb out and unlimber "cramping" arm and leg muscles?

Fingertip-operated Link-Belt Speeder power hydraulic controls minimize fatigue

With Speed-o-Matic—the true power hydraulic control system—shovel-crane response is fast, positive, easy. So easy that operators are actually "eager" to push the rig to its limit—all shift long! And what a limit!

You've never seen any machine that can compare with a Link-Belt Speeder for cat-quick agility and long-lived, bulldog stamina. Report after report shows these rigs account for up to 25% or more output per shift.

Seeing is believing

The precision construction, the quality materials and the advanced engineering that have gone into today's Link-Belt Speeder speak for themselves. All we ask you to do is see your distributor and judge for yourself. Be as critical as you like! No shovel-crane on the market today—crawler or rubber-tired, ½ to 3½-yd, 8 to 60-ton capacity—can compare. Visit your distributor today or write for literature—LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA.

13,983

LINK-BELT SPEEDER

Builders of a complete line of crawler and rubber-tired shovel-cranes.

Resources: *In the next three months . . .*

Interior Secretary Fred A. Seaton's role will be to blunt the inevitable Democratic attacks on his predecessor, Douglas McKay, and to sell the Administration's "partnership" concept of resource development.

Ex-Interior Secretary Oscar Chapman—who was the key man in drafting the Democratic plank on water and power policies—will be sparking the Democrats' attempt to hang the "giveaway" label on the present Administration.

Construction's Top Election Issue

Oratory on the natural resource issue began long before the campaigns started, and will be heard long after they have concluded, but from now until Nov. 6 the party spokesmen will go at it hot and heavy. With both sides promising support of works affecting the nation's land, water and power resources, it will be a political debate over which party's way of doing things can get more projects built—sooner, and at lower cost.

This is construction's big issue in the campaign: How and by whom are the nation's resources to be conserved and developed. The Presidential election will determine this to a great extent; results of the Congressional contests will have their effect, too.

Resources definitely will be among this campaign's big issues—especially in the West. The highway matter—never much of a partisan issue anyway—was eliminated from the campaign by the passage of the new road act. Federal aid to school construction remains unsettled; the parties may differ over public housing and military construction. But the big partisan split, the hottest issue involving construction, is the water-land-power resource question.

The Democrats, the "out" party, are on the attack. They see this as a nearly classic issue: From their viewpoint, for oratorical purposes, it shapes up as a "rich" (Republicans and private interest) vs "poor" (Democrats and the general public) campaign.

The Republicans, the "in" party are defending "partnership" policy against "giveaway" claims. They are defending the Interior Department's record under Douglas McKay, who had become one of Washington's more controversial figures by the time he left office to carry on his present slugging campaign—on this very issue—against Senator Wayne Morse in Oregon.

Many will campaign on the resources issue, both for the Presidential candidates and for lesser offices. They will concentrate in the West, where reclamation is a factor, but will also be found making their points in the Tennessee Valley on power, in the Ohio Valley on navigation, in New England on flood control, in New York on the Niagara, in Florida on land reclamation, or most anywhere on atomic power development.

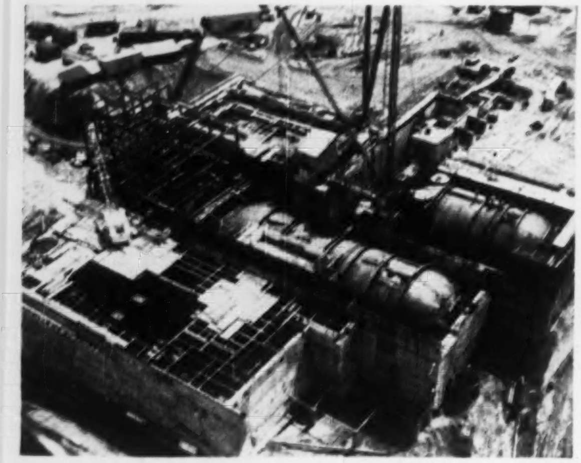
But behind the campaigners, in each camp, it will be one man largely calling the shots. For the Republicans it is Interior Secretary Fred A. Seaton. For the Democrats it is Ex-Interior Secretary Oscar L. Chapman.

Chapman has already gotten in his licks, blisteringly, in a report intended as a basis of the party's platform on the resources issue. This advisory committee report, in its main points, seemed to add up to a party line: Let the federal government assume primary responsibility.

Said Chapman's committee: "**With natural resources becoming scarce and capital more plentiful, continued public investment in natural resources is necessary for the general welfare. . . . While private enterprise has found that certain investments in natural resources development are profitable, the extent and character of such projects is severely limited both in nature, scope and short-run benefits wherein profit is the guiding motive.**"

Partnership is an appealing word, and the Democrats take cognizance of it. In fact, they claim it was their

. . . The Elections Could Decide:



Who'll build the atomic plants . . .

Shippingport is a "partnership" deal, heavy on the taxpayer investment. But who's to build the future plants?

How are rivers to be harnessed . . .

Hells Canyon is not the only bone of contention over how and by whom water resources are to be developed.

concept originally—but they view it as partnership between the federal government and the public. To them, the heralded Eisenhower partnership program is **"an unholy alliance between the federal government and the private power companies of America."**

The Democratic line is that the Roosevelt-Truman administrations, spanning two decades, were the "truly golden age" for American conservation. The Chapman report counsels taking several steps to get back on that path. Here are Chapman's main points:

- Treatment of the river basin as a "unit for resources development" must be resumed "without compromise."
- The Eisenhower "partnership" policy is nothing but "an unholy alliance" between the Administration and private power companies.
- The goal of controlling rivers to prevent disastrous floods has been sacrificed to give "private profit a higher priority than human lives."
- The Hells Canyon "giveaway," Administration attempts to "break the back" of TVA and the Columbia River Basin comprehensive plans, should "shock the nation."
- Coal, oil, gas, hydro and atomic energy "should be fully developed in the public interest and for the benefit of the consumer."
- The "public power yardstick" must be "maintained and strengthened."
- The federal government should undertake "construction of large, experimental atomic power reactors."
- "Refusal to prosecute a vigorous atomic power generation program to harness this unbelievably vast energy base has caused our nation to lag rather than lead in the world energy race."
- Regular agencies have been "rendered inoperative" by Republican appointees, and these agencies are now "stacked for monopoly."
- The federal government "must resume leadership in conservation investment and act as the logical supplier of public capital."

It comes down to a feeling—diametrically opposite to that held by Seaton—that there's little room for private capital and private industry in development of resources in the public domain.

Seaton is the man on the big political spot as the Democrats unleash their fury against the Administration President Truman calls "special-interest and special-privilege." As the bright young man, a real comer on the Eisenhower team, Secretary Seaton has not been in office long enough to have made himself much of a personal issue. His was about the least controversial appointment the President could have made, and though he says, "I'm controversial already," after only weeks in the job, he knows that the force of personal attack from the opposition will be directed not against him but against his predecessor, Douglas McKay.

The new Interior Secretary has spent much time reviewing some controversial decisions made in the McKay regime, decisions the Democrats would be expected to attack. And he'll make the attack difficult by not

President Vetoes Rivers and Harbors Bill

For the first time since 1940, the annual rivers and harbors authorization bill has been vetoed. This year's bill, killed last week by President Eisenhower, included $1.6 billion worth of projects.

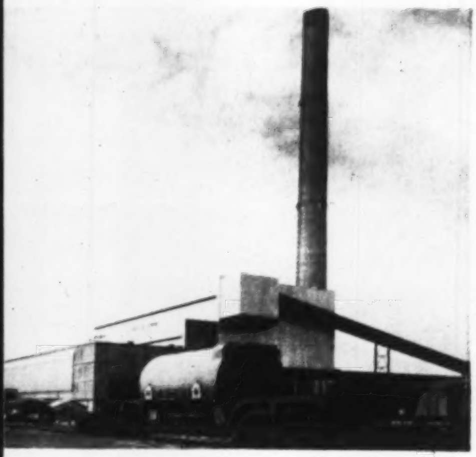
Political effects of the action—coming in an election year—are more significant than the actual effects since the present backlog of authorized projects totals some $6.5 billion. Congress has plenty of time to act during its next session, when presumably it will appropriate some money.

The President vetoed the bill because one-third of the projects had not been reviewed by the various prescribed federal and state agencies.

In fact, some of the projects have not even been studied by the Corps of Engineers.

The Army Engineers have informally advised several congressmen that certain of the proposed authorizations "have absolutely no engineering or economic justification and are a waste of the taxpayers' money."

From the above, it is apparent that this year's bill carved out some unusually well spiced pork barrel, defined in Webster's Unabridged as "a fund of money appropriated from the federal treasury, as for improving rivers and harbors, regarded as appropriated more for local patronage than to make needed improvements."



What's to become of TVA . .

Is Gallatin, latest steam plant in Tennessee Valley, to be TVA's last?

being easily labeled by either of the extreme warring factions represented by McKay on the one hand and Morse on the other. The voting record of this 46-year-old Cabinet member, in a short period in the Senate four years back, would shock both bitter-end exponents of private power and all-out public power zealots.

He thinks the partnership approach is the only practical solution to meeting the nation's long-term electrical needs. And he is strongly against such proposals as federal construction of a high dam at Hells Canyon.

He sees $50 billion worth of construction needed to meet electrical energy demands over the next ten years—hydro and steam, and possibly atomic installations. **"The federal government just does not have that kind of money; sheer economics force you to the partnership concept,"** he says. That's why **"partnership is not new. . . . When you get down to it, there are not too many 100% pure federal power projects."** He sees partnership as cooperation between federal and local governments, as well as between Washington and private interests.

Summing up, Seaton has said: **"I don't believe in federal control of power."** And as an insight to his broader philosophies, which are sure to be heard expounded in the weeks ahead, here is a piece of a speech made in 1952 in the Senate, before he climbed on the Eisenhower bandwagon:

"It does no good whatever at the polls to cry 'socialism' every time a measure is offered to combat or correct an evil . . . Nor is it socialism to conserve our natural resources, to build dams for flood control, for irrigation, and for electrical power."

Just as Oscar Chapman will hardly be his party's sole spokesman on matters of national resource conservation and development, Fred Seaton will be only one, albeit the most prominent, of the Administration's forces through the campaigning ahead. For there are other potential resource conflicts outside the personal concern of the Interior Secretary.

There are votes to be had in Maine for support of the Passamaquoddy tide-control dam; in Pennsylvania for proponents of a deeper Delaware River; in Lake states for port development enthusiasts; in nearly any state for the champion of water-land-power resource conservation and development.

Both the Democrats and the Republicans hope to have that champion.

Cave-in Deaths Force Reforms

New York City acts to force contractors to provide better protection for the public at project construction sites

A set of safety rules and insurance provisions that will be imposed, by way of contractual obligations, on contractors engaged in public work, has been announced by New York City and state officials. The new regulations are the culmination of a series of safety conferences held after a recent Brooklyn cave-in claimed the lives of six children (ENR June 28, p. 100).

The announcement was made jointly by Jacob K. Javits, State Attorney General; Robert Moses, City Construction Coordinator, and John W. Johnson, State Superintendent of Public Works. It also contains a tentative agreement on the division of responsibility among state and city agencies dealing with highway construction within city limits.

The new stipulations, to be included in all future Department of Public Works contracts, will require that the contractor:

Erect barricades of such material, height, and strength as to preclude all but the most difficult access to the site by unauthorized persons.

Install warning signs for protection of the general public. (Present contracts require warning signs only for motorists.)

Work with city police department to keep precinct patrolmen informed on job site conditions.

Provide watchmen on a 24-hr basis, in sufficient numbers to guarantee that no hazardous section of a project will be left unattended for protracted periods.

The new safety requirements are basically the same as those recommended by Javits in his report on the Brooklyn accident (ENR July 19, p. 25).

In addition to inclusion of the safety clauses, new contracts will also require that contractors' liability insurance be expanded to include the city as one of the insured.

In the division of responsibility, it is agreed that:

The state shall prepare plans, specifications, and contracts; and shall let contracts, supervise and inspect the work.

The city shall approve plans and specifications and acquire right of way.

The contractor shall continue to comply fully with all rules, regulations, ordinances and codes pertaining.

Who Runs Road?

State legislature is asked for a ruling on Penn pike

The running fight between Pennsylvania's Governor George M. Leader and the Turnpike Commission took another turn last week with a demand that the state legislature clarify the question of who runs the road.

The question of operation of the pike has been in the air since Attorney General Herbert B. Cohen ruled (ENR July 26, p. 17) that the Department of Highways—not the Turnpike Commission—has jurisdiction over all plans, maintenance and right-of-way acquisition. The ruling seemed to strip the commission of all powers except policing, financing and toll collection.

At a meeting of the turnpike commissioners last week, James F. Torrance, Jr.—one of the two Republicans on the five-man body—introduced a resolution calling on the legislature to clarify the law on maintenance work. The legislature doesn't meet until next January, but Torrance said he had introduced the resolution to bring the controversy to a head. Commissioners, in effect, tabled the resolution, for "further study."

Meanwhile however, the commission had made no apparent move to comply with the attorney general's ruling. Chairman G. Franklin McSorley said he needs time to study the change.

"Pilot State" Plan

BPR will set up study of interstate system traffic

As a step toward establishing costs and traffic trends on the newly-planned interstate highway network, the Bureau of Public Roads soon will designate one of the 48 states as a "pilot" state.

That information—plus some serious discussion of financial aspects of the new highway legislation—were focal points of interest at a two-day planning conference of the Western Association of State Highway Officials at Cheyenne earlier this month.

News of the "pilot state" plan came from E. H. Holmes, deputy BPR commissioner, who commented that a principal purpose of the study would be to determine methods of estimating traffic volume by the year 1975. Newly passed federal legislation requires that roads on the interstate net be designed to handle traffic of 1975. And the problem of estimating normal growth of population, diversion of traffic to the improved system and generation of new traffic must be evaluated.

The problem of financing the $32.5-billion highway plan came in for serious questioning—particularly from the angle of whether or not tax provisions included in the legislation are sufficient to cover the program's costs over the full 13-year period.

Guilford P. St. Clair, chairman of the Department of Finance, Economics and Administration of the Highway Research Board, told delegates that the new tax provisions on rubber and gasoline probably wouldn't be sufficient to cover the program in future years.

Amplifying St. Clair's concern was a statement from Richard M. Zettel of the University of California Institute of Transportation and Traffic Engineering, who saw two danger signs—great pressue for inclusion of additional roads in the state and federal highway systems and an inflationary spiral touched off by the tremendous impact of the road program on the nation's economy. Such inflation, he warned, would reduce the amount of road that federal dollars will build.

In a partial answer to these comments, Holmes expressed "confidence" that Congress would see to it in the future that funds are made available to complete the interstate system.

Other speakers during the two-day conference commented on already-rising political pressures within the states for improvement of roads now off both federal and state highway system maps.

Planning for Innovations, Theme of Chicago Meeting

A meeting to be held in Chicago on December 6 and 7 will cope with building industry problems arising from architectural innovations. Its purpose will be to coordinate research and development planning to meet these problems. Sponsorship is by the Armour Research Foundation, Illinois Institute of Technology.

Called "Modern Builders Conference," the two-day session will be held in the assembly hall of Chicago's new $40-million, 41-story Prudential Building. It will consider research and development from the viewpoint of architects, engineers, contractors, materials manufacturers, realtors and building operators.

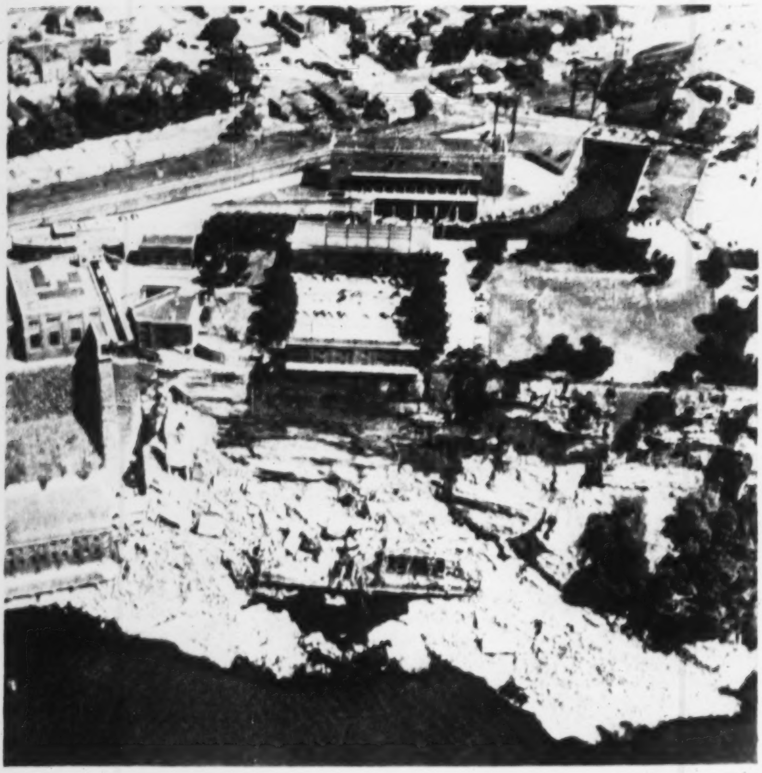
The first day will cover research planning as the architect sees it, architect-builder coordination, and research in structural clay, wood and concrete products. The second day will include contractor-engineer and realtor-operator problems in material handling, prefabrication, interior surfacing and services.

Court Knocks Out Move To Delay Conn. Turnpike

A move by a Connecticut conservation group that had threatened to delay construction of the state's $432-million turnpike was knocked out in a New Haven court last week.

The Connecticut Conservationists, Inc., had demanded an injunction against the state to prevent it from dredging more than 2,000,000 cu yd of fill from the bottom of Long Island Sound for use in construction of the water-level highway, and a planned parking lot. Conservationists argued that dredging would bring about shore erosion and tend to wipe out oyster beds and damage wildlife shelter areas.

In denying the injunction plea, Superior Court Judge Elmer W. Ryan said there is no evidence that the state will have to pay for possible erosion damage.



Cleanup Is a Big Job at Schoellkopf

Cleanup operations continue at the Schoellkopf Station of the Niagara Mohawk Power Corp., buried under tons of rock by a tremor-triggered slide June 7 (ENR June 14, p. 27). With the power canal (upper right) dammed, workmen have dynamited much of the 50,000-ton pile heaped on the station by the rockfall. First stage of the cleanup should be finished within the next two weeks.

N. Y. Power Authority will try the . . .

Back Door for Niagara Project

Now that Congress has failed for the sixth year to decide whether power at Niagara Falls should be developed by private or public interests, the Power Authority of the State of New York will attempt to break the deadlock by applying for a Federal Power Commission license.

PASNY believes—and Washington observers agree—that whatever decision FPC makes will end up in court. The court would then be forced to rule on the validity of a Senate-inserted reservation in the 1950 treaty between Canada and the U.S. which allocated the power potential at the Falls. The controversial clause gives Congress the right to decide whether development should be under private or public auspices.

The Power Authority holds that this reservation is unconstitutional and leaves unimpaired the right of FPC to license the $405-million Niagara project.

If FPC turns down its license application, the authority would take the matter to court. If FPC approves the application, some private power interests would undoubtedly put the action to judicial test.

Most legal experts won't commit themselves on the eventual outcome. But they note that FPC has granted licenses in such cases as the St. Lawrence River and Hells Canyon projects. It is also noteworthy that PASNY has in hand a lengthy legal study by two eminent experts on international law. Their finding: The treaty reservation would not hold up in court.

One FPC official says the commission "would examine the legal implications very critically before rejecting the application." It is assumed, therefore, that FPC would be very sure of its legal ground if it granted a license to the New York State Authority.

Speculation over Congress' failure to act is rife. Many hold that legislators from states other than New York refused to act until all their colleagues from New York—Democrats and Republicans, public and private power adherents—could agree on what is best for New York State. With this possibility highly unlikely, some analysts don't see Congress voting a Niagara Bill next year or any other year for that matter.

Disappointment by most interested parties over Congress' failure to act now gives way to optimism over the outlook for some sort of decisive action to be taken on the Niagara question stemming from PASNY's license application.

Bid Call on Glen Canyon

Bids will be opened by the Bureau of Reclamation at Kanab, Utah, Sept. 10, on the diversion tunnel, first major contract for Glen Canyon Dam, key structure in the Upper Colorado Project. The tunnel will be some 3,000 ft long, and would be used to carry Colorado River water around the work site.

USBR, in making the bid-opening announcement, also confirmed that a thin arch dam may likely be the final design at Flaming Gorge, Wyo., upstream dam site in the Upper Colorado scheme. Studies of rock are under way and indicate a thin arch may be the answer.

Small Projects

Bill authorizes loans to state, local water users

The President has signed the small projects bill that authorizes the Secretary of Interior to make up to $100 million in small loans to state and local water user groups. Primarily the bill is designed to aid irrigation and flood-control projects and its provisions limit the lending area to the 17 western states.

In acting on the bill, Eisenhower said that he was signing it only because of the "general merits" of the measure, but there are changes he wants made when Congress meets next year.

The bill puts a ceiling of $5 million on the amount the federal government can loan on each project; provision is made, however, for additional money grants up to $5 million to be made by the government to cover the flood-control portion of a project. Projects that cost up to $10 million can participate in the program if the state or local groups put up the additional $5 million not covered by federal loans.

No time limit is put on how fast the Department of Interior must use its authorized $100 million. loans can be made for up to 50 years.

The Bureau of Reclamation says that it has some 439 projects that can qualify for loans. These are almost entirely irrigation and flood-control projects. But, there will be a lot of weeding out done before money starts going out. Out of the total 439 projects, the cost of building only about half of them would run close to $175 million, says the bureau.

As signed by the President, the bill gives both the Senate and House Interior Committees the power to veto loans made by the Secretary of Interior within 60 days after a project has been approved with Congress empowered to override committee actions. It is this part of the measure that the President wants changed; he says the matter runs contrary to the practice of good government and wants Congress to leave complete administration of the act up to the Department of Interior.

The President said that leaders in Congress had agreed to the change, and it was on this basis that he finally went ahead and signed the bill into law.

Although the bill has been signed, it does not mean that loans will start going out immediately to water user groups. The Department of Interior must first go to Congress next year with an appropriation request; however, this is not likely to take place before the next fiscal year.

The big hurdle, however, has been to get the authorization approved; it has been before Congress for the past several years.

Giant Sphere to Be Built To House Atomic Reactor

The construction contract for the second largest steel sphere in the world was awarded this week to the Chicago Bridge and Iron Co. The sphere, to house an atomic reactor, will be 190 ft in diameter.

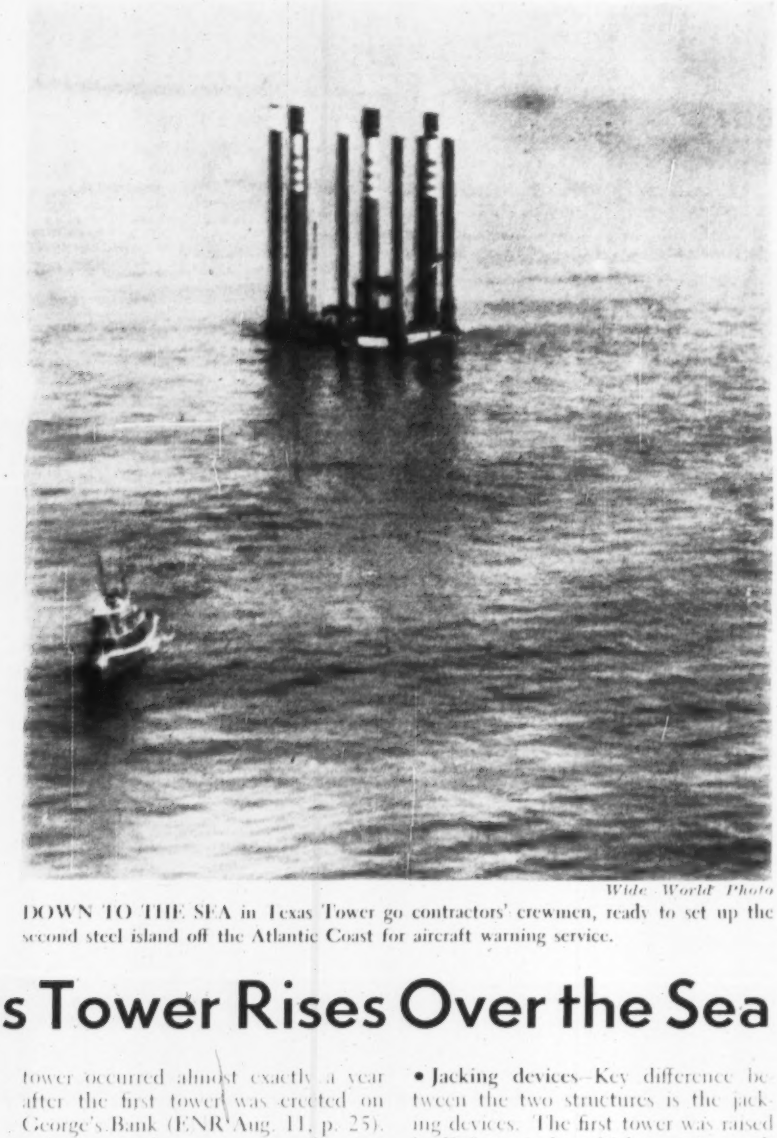
The reactor is being built by the General Electric Co. for Commonwealth Edison Co.'s nuclear power station near Chicago, Ill. Bechtel Corp. of San Francisco, Calif; engineer-contractor for the plant (the largest all-nuclear atomic power station yet scheduled), awarded the contract. The reactor and its equipment will power a 180,000-kw nuclear power station which is to be located 47 mi southwest of Chicago.

The welded steel plates that will enclose the giant ball will be hoisted into place by a derrick working from atop a temporary central steel tower. The sphere will be supported on a ring of steel columns resting on a concrete foundation.

Within the sphere will be constructed a 15-story-high reinforced concrete structure that will support the reactor and its auxiliary equipment. Total weight of the complete structure will be about 3,000 tons. To guard against leakage in the sphere, all welds will be X-rayed and soap bubble tests conducted.

Ground will be broken this spring and completion is expected by early 1958.

Fifty miles south of Nantucket Island and 230 miles east of New York City—another radar sentinel takes its place in the outer line of defense of the U.S. mainland as . . .



Wide World Photo

DOWN TO THE SEA in Texas Tower go contractors' crewmen, ready to set up the second steel island off the Atlantic Coast for aircraft warning service.

Second Texas Tower Rises Over the Sea

More than 230 mi due east of New York City, the second "Texas Tower" radar warning station is already standing clear of the bottlegreen waters of the Atlantic Ocean.

Launched from the drydock at Portland, Maine, where it was constructed, the steel island began a 250-mi tow to its position early August 9 and reached anchorage noon, Aug. 12. Workers aboard the "island" immediately dropped its eight temporary legs through 80 ft of water to the bottom, and by noon Aug. 13 the platform was clear of the ocean surface.

The location is on Nantucket Shoals, about 48 mi south of Nantucket Island and 75 mi south of the nearest bit of U. S. mainland—Cape Cod. The position is roughly 116 mi east of Montauk Point on Long Island, and about 135 mi south of the position of the first tower on George's Bank.

• Different—but similar—The launching and positioning of the second tower occurred almost exactly a year after the first tower was erected on George's Bank (ENR Aug. 11, p. 25). In outward appearances, the two towers will look very much alike, and both are a part of an early-warning radar network being set up for the protection of the U. S. mainland from surprise air attack.

Both towers are triangular steel structures, roughly 200 ft on a side and 20 ft in depth and contain living quarters for a complement of 60 men and space for machinery and equipment to serve the maze of radar equipment mounted on the top.

The general scheme for erection is similar—but there are differences in the size of the three permanent legs and in the methods of jacking the platform out of the water. Internally, there are some structural differences—changes made principally for convenience in operating the installation.

The older tower stands in 52 ft of water, the new in 80 ft.

• Jacking devices—Key difference between the two structures is the jacking devices. The first tower was raised by DeLong jacks, which operate much on the principle of a boy "shinnying" up a tree; the new tower was raised by Roebling jacks, which utilize strands of wire rope.

The Roebling system consists of lower and upper set of wedge grips, actuated by hydraulic jack. Carried by a heavy frame fixed to the platform itself, three of these grip-and-jack assemblies are grouped around each tower leg. The grips act on pairs of high-strength wire rope strands, suspended from a yoke at the top of the tower leg. In operation, the lower grip is clamped tight to the wires while the upper grip is released and extended upward. The upper grip is then clamped on the wires, the lower grip released, and the entire assembly and platform pulled upward. The lower grip is then clamped again, and the cycle repeated.

Use of this system, however, required that the full length of the pipe legs—both temporary and permanent—be constructed on the platform before it puts to sea, since no sections could be added at the job site, as was done on the first job.

• Seagoing whatsit?—As the tower took to sea, then, it presented the picture of a 200-ft triangular steel barge, topped by eight 6-ft dia steel temporary legs, three 14-ft dia permanent steel legs, extending upward 247 ft into the air.

Erection procedure was to winch down the temporary legs to bearing on sea bottom, then raise the tower to its predetermined height of 67 ft above the water. Then the three big permanent legs go down to bottom, and are dredged from within until they have reached a point 60 ft below the sea floor. Clamshell buckets and water jets will be used to sink the big pipes. Once at position, the main legs will be sealed at the bottom with tremie concrete, then a 9-ft dia pipe slipped inside, and the space between the two filled with concrete mixed on the platform deck. (The older tower's main legs are 10 ft in diameter, except for a 15-ft dia in portions under water.)

The hollow centers of the legs will house piping for service lines, and provide inspection galleries.

Internally, the most significant change in construction is the use of open trusswork for supports, rather than sheet-metal bulkheads as in the first tower. The open steel work will provide easier access to various parts of the interior.

The platform and the legs were fabricated and assembled by Continental Copper & Steel Industries, Inc., which took over and rebuilt an abandoned shipyard at Portland for the work. The same contractor is building the third tower at the same location.

Contractor for the towing, erection and completion of the tower is a joint venture of J. Rich Steers and Morrison-Knudsen, Inc. Engineers are Moran, Proctor Meuser and Rutledge of New York and Anderson-Nichols & Co. of Boston.

Capt. J. J. Albers, CEC USN, is officer in charge for the armed services.

A total of five such towers, placed on coastal shelves and shoal areas, have been planned as a part of the radar protection of the U. S. East Coast. Radar-carrying ships will fill in gaps where water depths are judged too great—at the proper distance offshore for the permanent installations. One tower, however, will be placed in 200 ft of water.

Million Horsepower

Alcan picks builders of $135-million hydro job for Quebec aluminum plant

The Aluminum Company of Canada, Ltd., (Alcan) has announced the general contractors selected to construct its planned $135-million, 1,000,000 hydroelectric development at Chute-des-Passes on the Upper Peribonka River, Quebec.

The contractors forming this group are Perini Quebec, Inc., sponsor, McNamara Quebec, Ltd., and Quemont Construction, Ltd.

H. G. Acres and Co., Ltd. designing engineers for the Bersimis power project, among many Canadian projects, are the engineers for nearby Alcan on this new one.

Alcan has leased from the Province of Quebec the rights to develop the power site, and has been carrying out engineering and geological studies to determine the most economic design for the project.

It is expected that first power from the new powerhouse will be generated in about three years.

The Chute-des-Passes development is part of a previously announced $250-million aluminum expansion in Northern Quebec. Included in the program is the construction of 120,000 tons of new aluminum smelting capacity in the area, at a site as yet not definite.

The planned Quebec aluminum expansion and construction program at Kitimat, B. C., will increase Alcan's aluminum producing capacity from 650,000 tons per year at the end of 1955 to a figure in excess of 1,000,000 tons at the end of 1959.

The new power facilities will be constructed a few miles below the existing storage dam at Passe Dangereuse which creates on the Upper Peribonka River one of Alcan's main storage reservoirs. An intake tunnel 6 mi long will be constructed from this reservoir to a point downstream, where a gross head of 636 ft can be developed and where an underground generating station will be installed. The water, after passing through the tunnel and power station, will be discharged into the Peribonka River to resume its normal flow to Lake St. John and the Saguenay River, where it passes through Alcan's four downstream generating stations before reaching sea level.

The power project will have an installed capacity of 1,000,000 hp and is expected to add 700,000 hp to the firm power output of the Saguenay power system as a whole.

Baltimore's Second Bid Gamble Pays Off

When the Maryland Court of Appeals ruled that the City of Baltimore could not hold a contractor to an erroneous low bid that would presumably bankrupt him (ENR July 26, p. 99), municipal officials faced a risk-laden decision.

Their alternatives: To reject all of the bids submitted last Jan. 25 for construction of the Jones Falls Expressway and call for new bids or to accept the second low bid of $2,485,707.75, submitted by Brooklyn Engineering Co., of Baltimore.

Although construction costs have been rising since the first bids were opened, officials took a chance on advertising for bids a second time. Last week, the gamble paid off.

• Substantial savings—When the bids were opened Aug. 8, officials found that two of the four offers were $96,671.50 and $28,330 respectively, under Brooklyn Engineering's bid of last January.

Apparent low bidder was Charles W. Williams & Associates, of Baltimore, at a figure of $2,389,036.25. The firm did not submit a bid last January.

Second lowest of the new bids was offered by Brooklyn Engineering at $2,457,377.75.

DeLuca-Davis Construction Co., which submitted the erroneous low bid of $1,769,064 in January, did not compete for the job this time.

The contract is to build a conduit to enclose the Jones Falls stream for a distance of 2,500 ft where it passes under several of Baltimore's north-south streets. The new expressway is to be built atop the conduit.

• Less work, less money—While the results of the new bidding were in line with Baltimore's past experience—that when projects are readvertised because of bid disputes, the new offers run lower—there was another factor: less work.

A public works official noted that the amount of borrow in the job had been cut from 35,000 cu yd to 20,000 cu yd.

Figuring on the basis of $2 a cu yd, this official said that $30,000 of the $96,000 saving could be attributed to this change.

Another point: The conduit will not require much structural steel so the new rise in steel prices will not be significant on this job.

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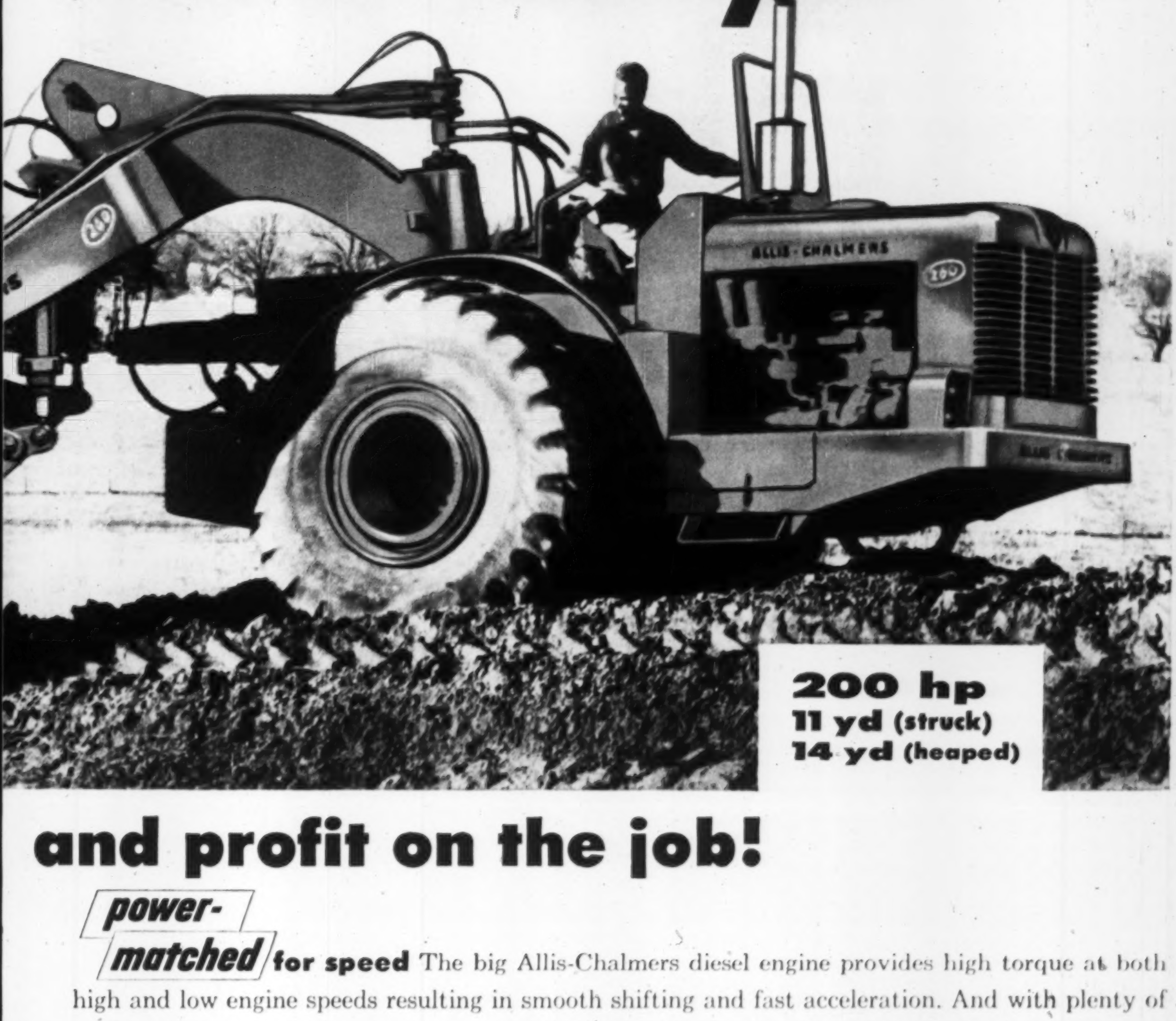
new TS-260

power-matched for production

power-matched **to capacity** With more than 18 horsepower for every yard of struck capacity, the new TS-260 has plenty of power to move full loads at full speed – under all conditions.

power-matched **to strength** The TS-260 has the structural strength and balance to effectively utilize all of its horsepower . . . with extra capacity built into the clutch, transmission, final drives and drive axles . . . with a heavy, all-steel, box-type tractor frame . . . and with proper over-all weight distribution.

Motor Scraper



200 hp
11 yd (struck)
14 yd (heaped)

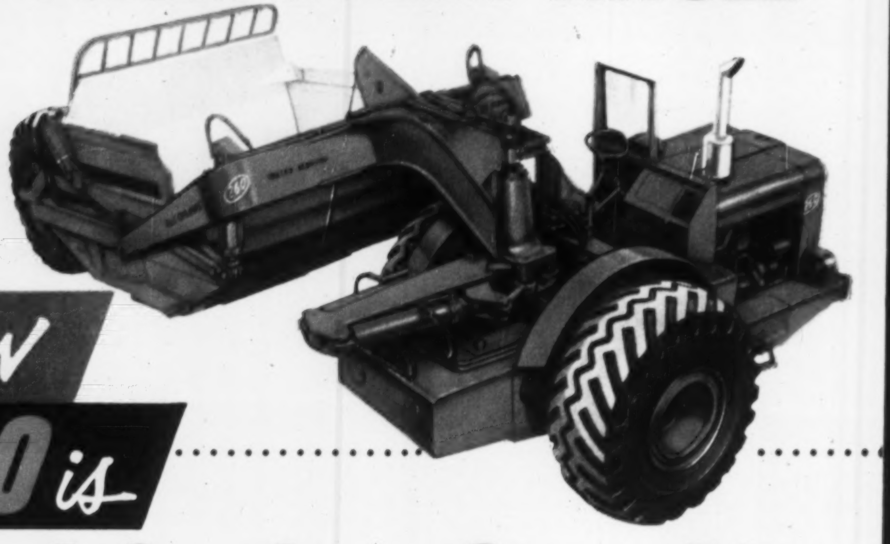
and profit on the job!

***power-matched* for speed** The big Allis-Chalmers diesel engine provides high torque at both high and low engine speeds resulting in smooth shifting and fast acceleration. And with plenty of engine power, the TS-260 loads fast, hauls fast, dumps fast . . . moves big payloads at low cost, even under tough conditions.

***power-matched* for operating ease** Overlapping gear speeds in all four gear ratios reduce gear shifting, speed work cycles. And with 90-degree steering for rapid maneuvering in close quarters, it's easy for the operator to get the most out of the TS-260.

The new TS-260 gives you these four basic advantages . . .
and many important new features

CHECK IT FROM EVERY ANGLE–



the New TS-260 is Designed for Low-Cost Dirt

"Live action" hydraulics for sure control. Positive gear-driven pump provides constant live power for both steering and scraper operation. Full-flow filtering, cross relief valves and simple design make this an efficient, safe performer.

Positive 90-degree steering for close-quarter maneuverability. The steering wheel is direct-link connected to the steering valve. A 30-degree turn of steering wheel directs full pump flow to two double-acting steering jacks for fast, positive turns up to 90 degrees. For slower turning at high speeds, a slight turn of steering wheel provides a smooth, regulated response.

Double-safety brakes for positive stops. Big, four-wheel air brakes provide sure braking under full load at full speed . . . and an air reservoir system with emergency relay valve means positive braking safety.

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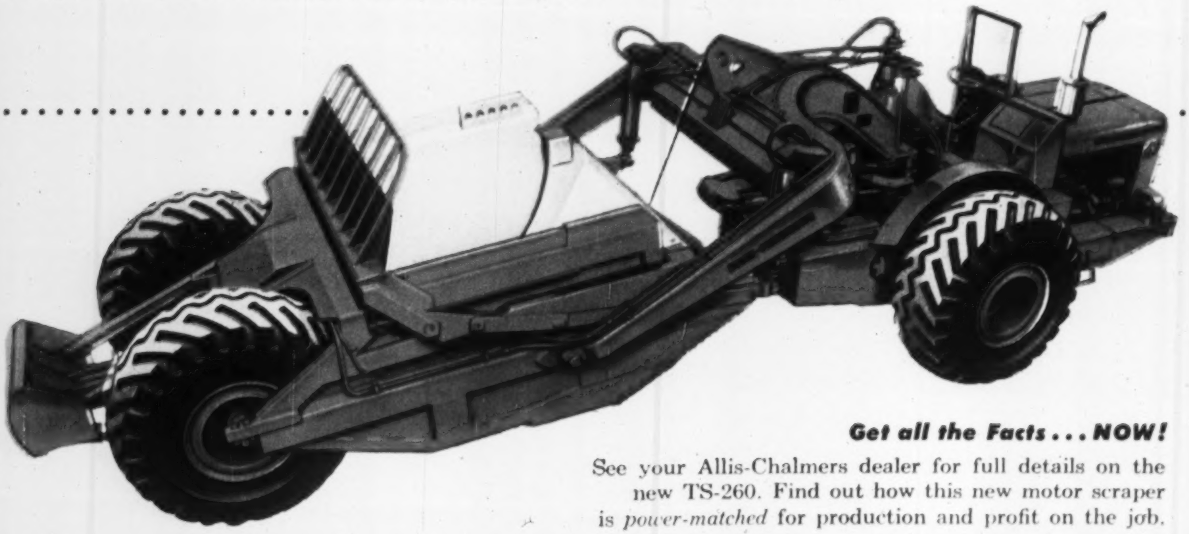
Quick, clean spreading with high apron and forced ejection. Patented linkage moves apron ahead and up when ejector goes forward . . . providing high apron lift and exceptionally large opening for clean, easy-to-control unloading.

Balanced weight distribution for maximum traction, long tire life. When empty, 66 percent of entire TS-260 weight is on front wheels–34 percent on rear wheels. When loaded, each wheel supports equal weight–providing excellent flotation and fast hauling.



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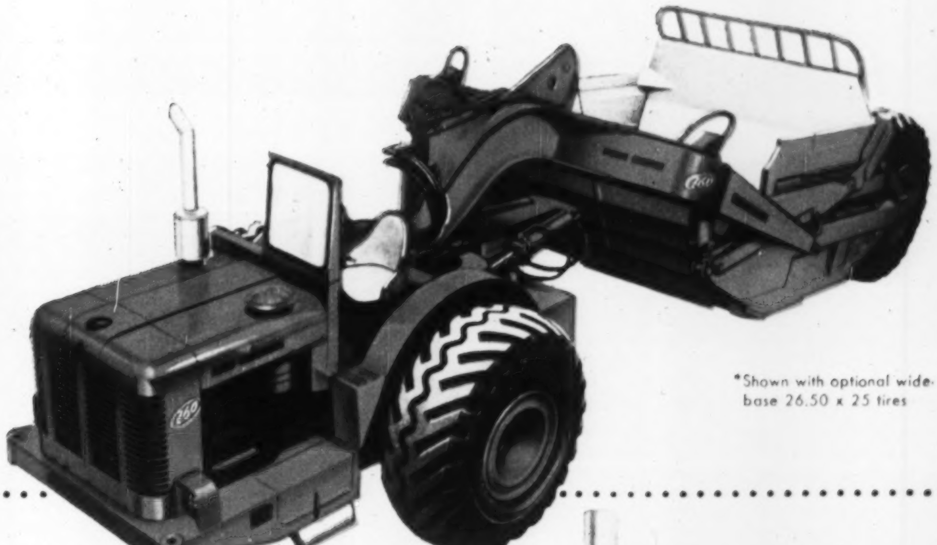
See your Allis-Chalmers dealer for full details on the new TS-260. Find out how this new motor scraper is *power-matched* for production and profit on the job.

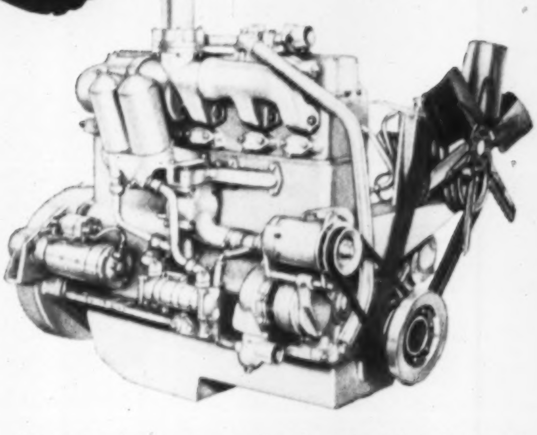


*Shown with optional wide-base 26.50 x 25 tires

Choice of tires to fit job conditions*. Standard 21.00 x 25 (20-ply) or optional wide base 26.50 x 25 (20-ply) tires provide a choice that insures carrying capacity and full flotation for steady going in all types of material.

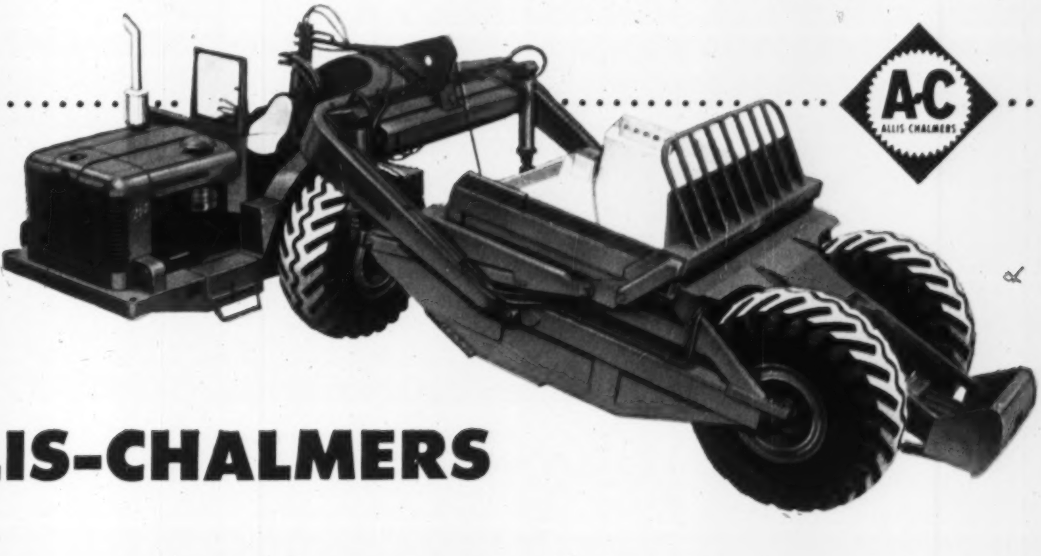
Big 200-horsepower Allis-Chalmers diesel engine. The 844-cubic-inch piston displacement and conservative 200-horsepower rating of this outstanding diesel engine provides plenty of reserve for low-cost operation under all conditions. "Follow-through" combustion results in sustained power, low peak pressures . . . smooth, steady performance.

New easy-shifting transmission. There's a correct gear ratio in the TS-260 transmission for every speed, every work condition. New clutch brake and gear overlap in all four speeds makes it easy to shift gears smoothly, maintain steady acceleration and full pulling power.



Heavy-duty power train. The TS-260 power train is designed to transmit high engine torque to the drive wheels with maximum efficiency. The engine, clutch and constant-mesh transmission are assembled as a unit to assure accurate alignment. Simplified removal of each individual component provides easy serviceability.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN



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Result? You can cover large areas *fast*... a four-man crew can actually install up to 4,000 sq. ft. a day. At the same time, Tri-Rib's high strength/weight ratio cuts dead load 8 to 10 lbs. per sq. ft. It's *lighter*, it's *stronger*, it's *more economical!* And Tri-Rib Roof Deck is made of Cop-R-Loy Steel for long dependable life. Qualifies for fire resistance rating as specified by leading insurance companies. Send for details or see our catalog in Sweet's.

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ACME
STEEL CO.

Each corrugation of the long-span metal arch roof of the new Phoenix sport coliseum is crimped transversely to improve its strength.

Record Span for Light-Gage Steel

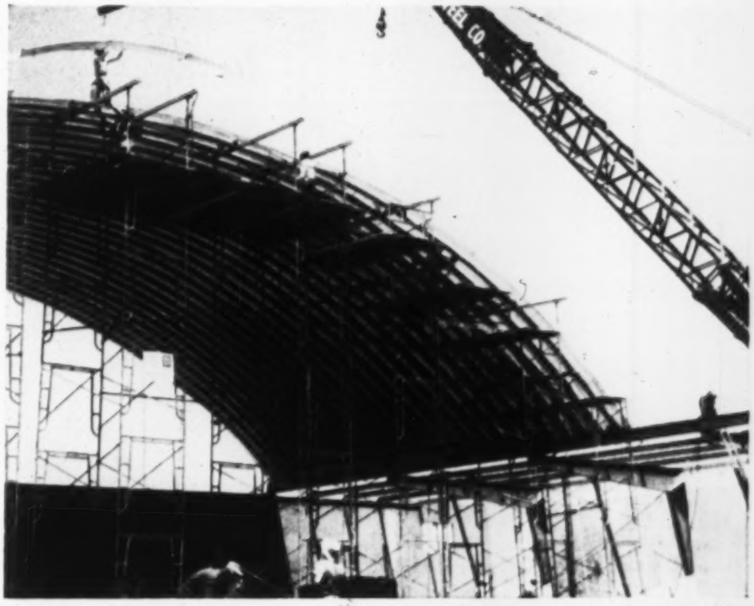
Light-gage steel arches span 100 ft to form the roof over the arena of a 262x200-ft sports coliseum in Phoenix, Ariz. This is believed to be a record for this type of construction.

The galvanized metal was formed into 9x2-ft sections, curved both longitudinally and transversely, which were bolted together to form the corrugated barrel arch. Each section was crimped transversely also, for added stiffness. Vermiculite plaster, 1½ in. thick, was applied to the underside after erection for acoustic and thermal insulation.

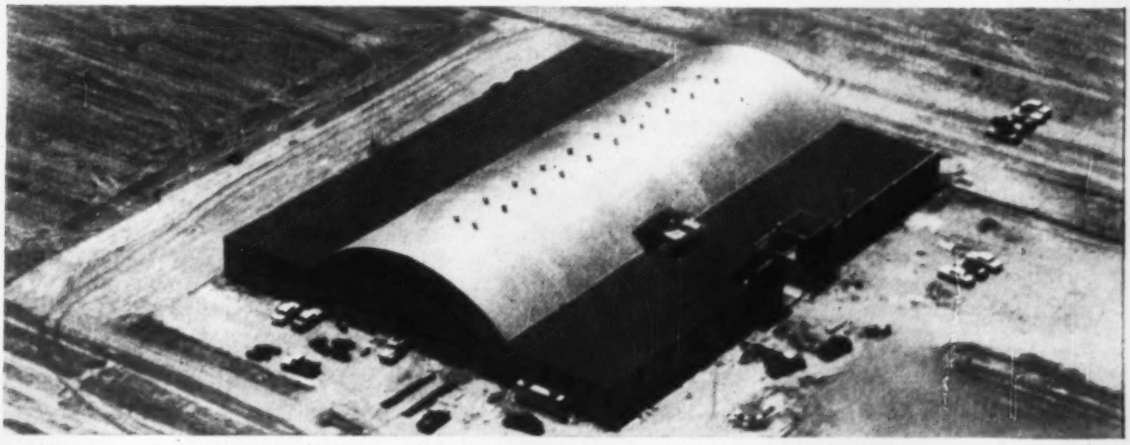
The arch is supported along its edges on the roof framing over the seating areas. This framing consists of tapered steel beams welded at the deeper end to tapered steel columns and cantilevering over sloping pipe columns to pick up the arch at the other end.

The $750,000 structure will have seats for 5,000 spectators; another 3,000 can be seated in the main arena for some events.

The arch was fabricated and erected by Acme Steel Co., Phoenix, from sections supplied by Wonder Building Corporation of America.

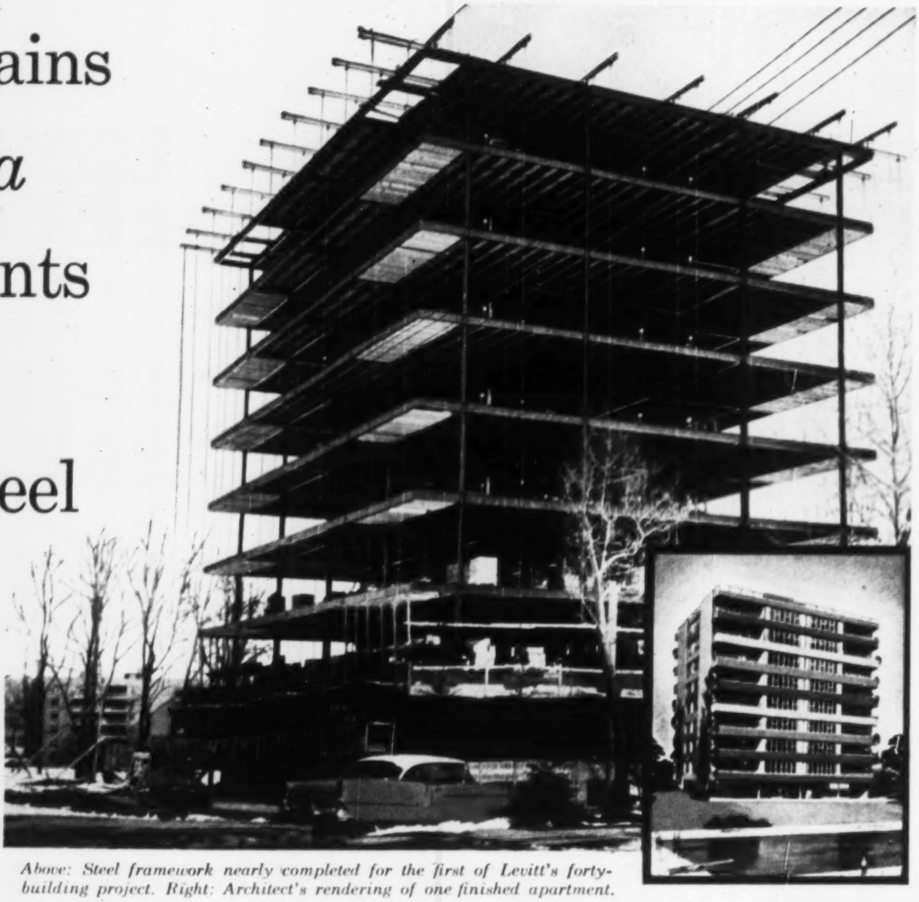


Inside the corrugated arch roof spans 100 ft, provides a vertical clearance of 40 ft at midspan—without columns and beams in its 262-ft length.



Outside the arch roof projects above the flat roofs, which have cantilever steel framing that supports the arch.

Levitt gains 160 *extra* apartments using Stran-Steel joists



Above: Steel framework nearly completed for the first of Levitt's forty-building project. Right: Architect's rendering of one finished apartment.

Zoning height restrictions in the Borough of Queens, New York, would have limited the luxuriously planned Levitt apartment-community buildings to only seven floors, using ordinary construction. But, by using new Stran-Steel 10-inch nailable joists, 2½" of height was eliminated per floor making it possible for each of the forty buildings to be eight stories high and well within the zoning limitations.

Actually the forty-building Levitt project will gain 160 more apartments since each floor will have four large apartments.

In addition to saving space, Stran-Steel joists make possible other important economies. For example, the Levitt buildings require less steel tonnage because the joists are lightweight but furnish all the strength required. Exterior brick work requires one less course of bricks per floor. And for interior flooring, precast concrete slabs are nailed directly to the joists. This time- and labor-saving feature is made possible by the exclusive nailable design of Stran-Steel joists.

Besides the new 10-inch nailable joist, Stran-Steel provides nailable 6", 8", 9" and 12" sizes. The 10" and 12" sizes are available in lengths up to 30'. For further details of Stran-Steel joists and other architectural products, contact your nearest Stran-Steel Architectural Products dealer or send the convenient coupon.

Stran-Steel Corporation, Ecorse, Detroit 29, Michigan

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Kansas City 16, Mo., 1322 Burlington
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New addition to the sandwich wall family is a limestone-faced panel, field assembled with insulation and metal backing. Panels were used for two Pennsylvania state buildings in Harrisburg.

Stone—New Look in Sandwich Panels

STONE-ENCLOSED BUILDINGS are Pennsylvania's 18-story Labor and Industry Building (center) and 11-story Property and Supplies Building (left) in Harrisburg.

First metal or concrete—and now stone for facing sandwich panels. Marking one of the first uses of a field-assembled stone panel is a new $10 million Labor and Industry Building at Harrisburg, Pa. Also to be enclosed in stone is a companion state-owned building that will be completed by the end of the summer for the Department of Property and Supplies.

Comprising the exterior of the two buildings are 4-in.-thick panels of Indiana limestone. The panels are mounted in a grid framework of steel tees and angles. Size of panels varies. A typical panel measures 3½ x 5 ft. Its weight is carried by a steel angle along its base while at the top it is held by steel straps.

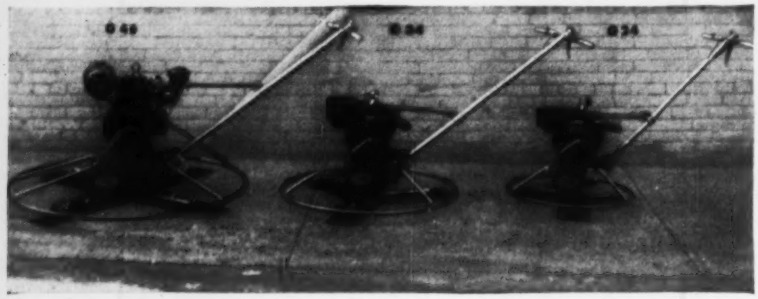
After being hoisted to the floor on which it is to be mounted, each panel receives a cement mixture which is trowelled on its inside face. Then it is put in position, after which 12 x 18-in. sections of cellular glass insulation, 2 in. thick, are applied with a cold-setting mastic. Only four dabs of mastic are used per block. This leaves a ¼-in. air space between the insulation and the stone, permitting condensation to run off. Moisture is caught by a lead flashing. Finally, a metal wall lining backs up the insulation and completes the dry-wall construction.

Rising 18 stories, the Labor and Industry Building is the larger of the two. Shaped roughly like a "Z," it provides more than 500,000 sq ft of floor area. The main section of the structure is 293 ft long, (is slightly bowed along its length, measuring 78 ft wide at the center, 72 ft across the ends). A 4-story east wing, 72 x 94 ft, and a 4-story west wing, 92 x

News about CONCRETE FINISHING

Here is a really smooth finishing job done on a super market floor with the STOW G-34 Roto-Trowel. Note that the operator was able to trowel right up to the walls, because of the rugged, stationary guard ring. According to men in the field, the new STOW trowel is the most advanced, best engineered trowel on the market; and it makes possible extremely smooth surfaces.

The STOW G-34 Roto-Trowel handles easily. It was many important safety features, such as the foolproof, dead-man clutch control that stops blade rotation the instant the operator releases the handle. The engine remains running, thus eliminating the necessity of re-starting the engine. For complete information about the complete line of STOW Roto-Trowels, write today!



46" Roto-Trowel 34" Roto-Trowel New 24" Roto-Trowel

SPECIFICATIONS

Model No.	Trowel Diameter	Ring Diameter	Engine	Trowel Speed	Float Trowels	Finish Trowels	Operating Weight
G-24	24"	25"	Briggs & Stratton 2.2 HP	35 to 130 RPM	6" x 10"		69 lbs.
G-34	34"	35"	Briggs & Stratton 2.5 HP	25 to 100 RPM	10 x 14"	6 x 14"	145 lbs.
E-34	34"	35"	G.E. Fan-Cooled 1½ HP	90 RPM	10 x 14"	6" x 14"	139 lbs.
G-46	46"	48.5"	Wisconsin - BKN 6.8 HP	25 to 100 HP	10 x 18"	6 x 18"	212 lbs.

STOW

STOW MANUFACTURING CO.

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CEMENT MIXTURE is trowelled on back of panel prior to insulation.

CELLULAR GLASS INSULATION goes up in 12 x 18-in. sections.

154 ft, make up the legs of the "Z".

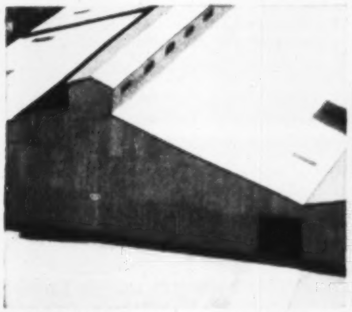
The building is framed in reinforced concrete with a concrete waffle-type floor slab. Total slab thickness is 11 in.—8 in. for the metal pan forms, 3 in. for the top slab. After under-floor ductwork is placed, the slab is topped off with 3 in. of lightweight concrete.

Offering 300,000 sq ft of floor space, the Property and Supplies Building will be 11 stories high. This building will have a steel-framed flooring system. Both buildings will be air conditioned.

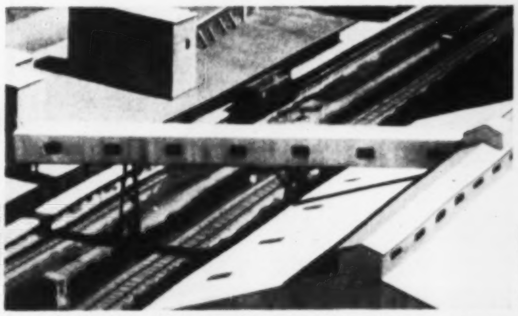
Architects-engineers on the project are Lacy, Atherton & Davis of Harrisburg, Pa. John McShain, Inc. of Philadelphia is general contractor. The owner is the Commonwealth of Pennsylvania.

Can standardized structures meet the custom requirements of a complex fertilizer plant? The answer proved to be "Yes, emphatically!"

WHY DIXIE GUANO COMPANY CHOOSES LURIA BUILDINGS

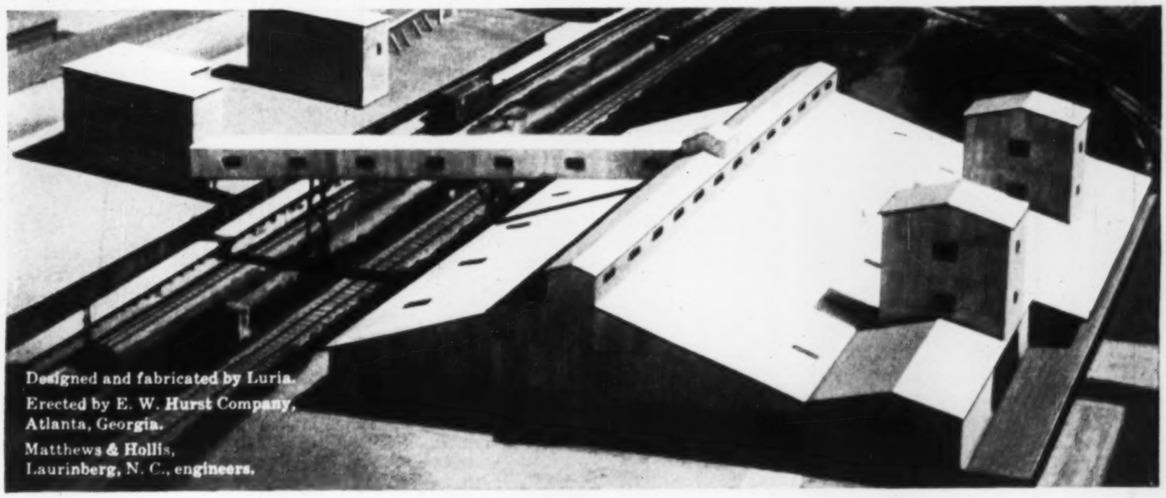


Bulk Storage Area with capacity of 12,000 tons of fertilizer can be filled during seasonal lulls by a single man.



Standardized Overhead Bridge by Luria contains conveyor belts that efficiently transport materials from the processing plant to the shipping center.

Multi-Story Buildups, adaptable to *individual* needs, house special processing machines.



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Erected by E. W. Hurst Company, Atlanta, Georgia.

Matthews & Hollis, Laurinberg, N. C., engineers.

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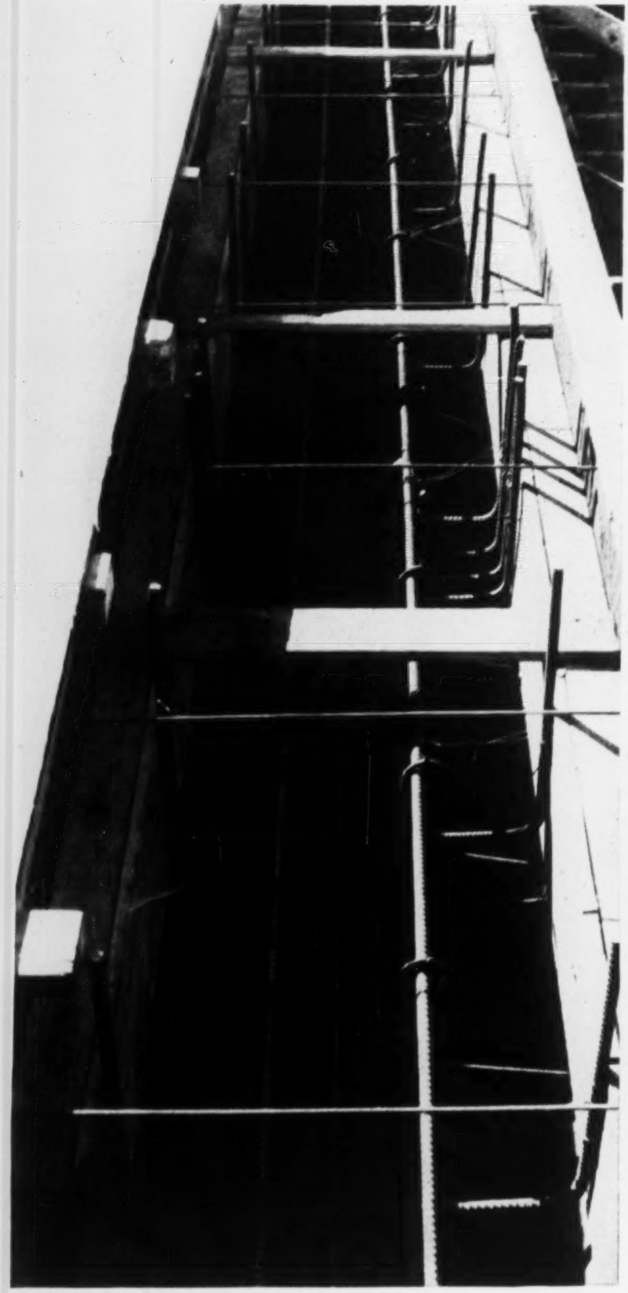

Nurses' Home, St. Anthony's Hospital, Oklahoma City, Oklahoma
C. L. Monnot, Architect, Harmon Construction Co., General Contractor

TRUSCON saves $17,000 in

St. Anthony's Hospital School of Nursing was designed as a monolithic concrete frame structure, four stories high. Prestressed beams, using Truscon Stressteel Tensioning Bars, span 52 feet over the auditorium and carry third-floor pickup columns which support fourth floor and roof.

$17,000 SAVING OVER ALTERNATE DESIGN.

The architect and structural engineer developed an alternate design for the beams using structural steel angles and plates. The contractor had the option of figuring this job either way. Stressteel construction saved approximately $17,000 over the structural steel girder design.

52-FOOT SPAN WITH MINIMUM DEPTH BEAM.

Use of the prestressed beams allowed a full 52-foot span without altering ceiling height. No posts or columns were required in the auditorium.

MORE SAVINGS ON FIREPROOFING.

Stressteel concrete beams are fireproof. But struc-

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This handsome natatorium features Truscon Donovan® Steel Windows that provide superb natural lighting facilities plus ventilation without drafts. Ventilators operate in unison, either by mechanical control or by completely concealed operators. The awning principle permits ventilation in inclement weather. Truscon offers steel windows for every purpose in a variety of sizes and designs. Send coupon for specific details.

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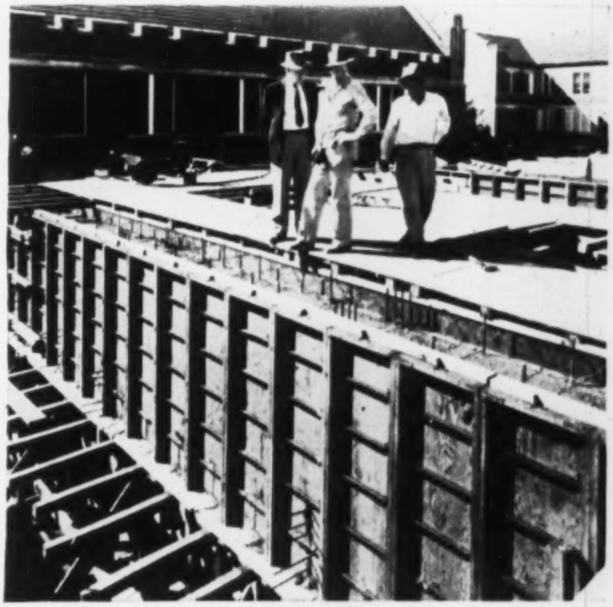

tural steel would have to be encased for fireproofing. More savings.

TRUSCON STRESSTEEL TENSIONING BARS MAKE PRESTRESSING PRACTICAL.

This patented principle utilizes alloy steel bars of exceptionally high strength, together with suitable anchoring assemblies. The alloy bars are fully capable of carrying the sustained high stress necessary to prestress concrete and to place it in a permanent state of compression.

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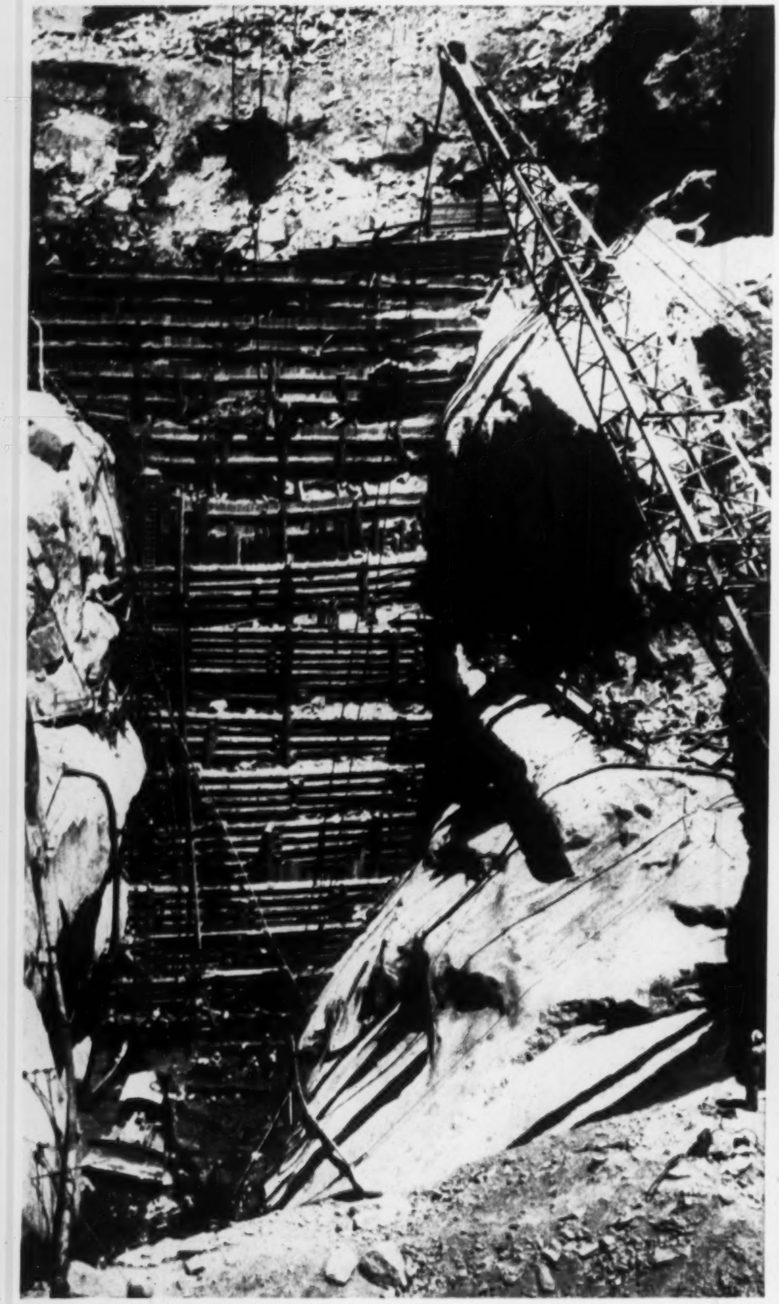
California's

Located on the Stanislaus River system, this water-resources project was a lengthy exercise in planning and financing

Building a water-resources project is often a much simpler task than the planning and financing of the work. This certainly is the case with the Tri-Dam Project, located on the Stanislaus River system in California. Several years of planning and overcoming of many work-blocking obstacles are now being rewarded with a peak construction effort.

Owned by two local irrigation districts—Oakdale and South San Joaquin—the project will provide water for full-season use. Present supplies are often exhausted by September. And there will be an installed generating capacity of 81,000 kw, which is the basis for financing the work on a local participation basis. Revenue bonds totalling $52 million are secured by a contract for sale of project power to the Pacific Gas & Electric Co. Thus, landowners in the area will benefit from additional water without any liens on their property.

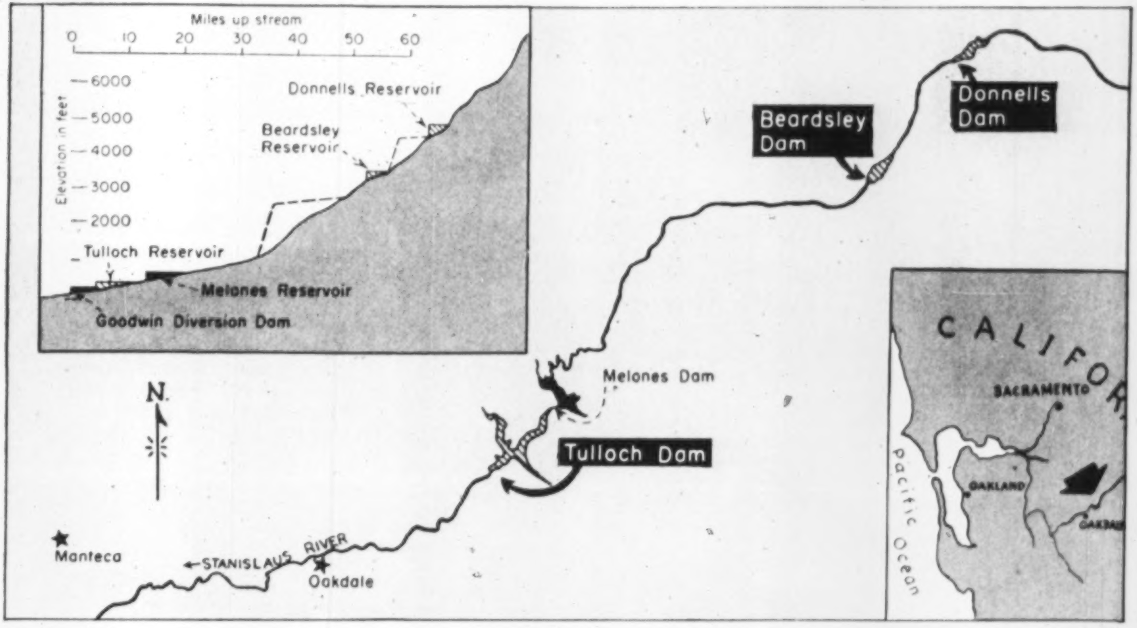
Power will be turned over to P.G.&E. at its transmission lines. Thus, the entire works—including powerhouses and substations—will be owned and controlled by the districts. Of course generating schedules will be worked out with the power company in accordance with power needs, available water and irrigation demands. The importance to the farmers of local ownership and control cannot be overemphasized. There is no state or federal agency that can change operat-



DONNELLS DAM—Foundations 200 ft down, guarded by cable-bound timber cribbing.

BEARDSLEY DAM—Earthfill geared to 20,000

Tri-Dam Project: A Local-Level Job


Miles up stream
0
10
20
30
40
50
60
Elevation in feet
6000
5000
4000
3000
2000
Donnells Reservoir
Beardsley Reservoir
Tulloch Reservoir
Melones Reservoir
Goodwin Diversion Dam
N.
Beardsley Dam
Donnells Dam
Melones Dam
Tulloch Dam
Manteca
STANISLAUS RIVER
Oakdale
CALIFOR
SACRAMENTO
OAKLAND
OAKDALE
Pacific Ocean

ing procedures to fit a larger operation or a political whim.

Financing on the basis of revenue bonds pledged against power sales follows a pattern used by the districts 30 years ago in construction of their other major joint-storage facility, Melones Dam. In the early case, the districts sold falling water to P.G.&E., which constructed and own the power plant. (The Corps of Engineers has authorization for a larger dam that would replace Melones and include substantial flood control benefits. First $100,000 of planning is in the 1957 fiscal program. Thus, it will be several years before construction could start on the $56-million project. The new dam would be 460-ft-high and of gravity type, storing 1,100,000 acre-ft.)

As the name indicates, the Tri-Dam Project centers around three dams. Donnells Dam is farthest upstream on the middle fork of the Stanislaus River. It is a thin concrete arch—ranging from 10-ft thickness at the crest to 41-ft at the base—rising 290 ft above streambed level. But excavation to bedrock extends more than 180 ft below streambed—the most

cu yd daily pace, to do job this year.

TULLOCH DAM—Long gravity structure for irrigation and river stabilization.

. . . Tri-dam project: a local level job

DEEP FOUNDATION for Donnells Dam is spectacular phase of early construction. The narrow hole has been excavated almost 200 ft below level of the stream bed.

spectacular construction phase of the project.

Donnells Dam is the most important insofar as power production is concerned. It will deliver water to a 7.2-mi, 12½-ft horseshoe tunnel. The tunnel is connected in turn to a powerhouse by a dramatic 2,600-ft-long, 81-in. OD penstock which will carry water down the 1,200-ft drop from tunnel portal to powerhouse. Maximum static head on the 54,000-kw generator is 1,481 ft.

Beardsley Dam is a 3,300,000-cu-yd earthfill structure about 12 mi downstream from Donnells. Some 280 ft high, it is the largest of the three dams when water storage is considered, backing up a 97,500-acre-ft reservoir. Just below Beardsley is a 10,000-kw power plant as well as a timber-crib afterbay dam to regulate releases from the power plant.

Some 45 mi farther down river—in this instance on the main stem of the Stanislaus River—lies Tulloch Dam. This unit is a concrete gravity structure—the third different type of dam on the project. Using storage for irrigation as the criteria, Tulloch in this case is the most important. And it provides stabilization of the river. The 230,000-cu-yd structure has a maximum height of 200 ft and a crest length of 1,600 ft. It, too, has a powerhouse located just downstream, with an installed capacity of 17,000 kw. As part of the Tulloch work and to provide an afterbay, the districts' Goodwin diversion dam just downstream will be raised 7 ft.

• Persistent efforts—The fact that the project is now under construction is a credit to the planning and persistent efforts of the local people. Several times the work seemed ready to proceed, only to be frustrated by some unforeseen difficulties. And these preconstruction maneuverings are perhaps even more interesting than the physical characteristics of the project and the construction program.

Studies of the project had been carried out since 1928, both individually and collectively by the two irrigation districts involved. Credit for this early foresight is generally given to T. P. Stivers who was then chief engineer of the South San Joaquin Irrigation District, and R. E. Hartley, chief engineer of the Oakdale Irrigation District. The two districts jointly decided to go ahead with the project in 1948. At this time Stivers and Hartley were aided by consulting engineer Frank E. Bonner, who made the hydraulic studies, R. W. Shoemaker, electrical consultant, and Chester Marliave, consulting geologist. During the course of their studies—water-rights acquisitions and the like—the districts jointly advanced $1.5 million out of their regular budgets.

As work progressed, it became apparent that the simplest means of financing the work was through a contract for sale of power to the Pacific Gas & Electric Co. P.G.&E. already has two generating plants on the same river, and the new units could easily be integrated into the company system.

The P.G.&E. contract calls for payment to the district of $2,204,000 a year, plus an additional amount for maintenance and operation of $302,000 a year. This latter figure may vary and is based on such things as wage rates. It is noteworthy that these payments do not vary with the amount of power delivered, which it is estimated will average 472,900,000 kwh a year. But, even before the P.G.&E. contract could be worked out, it was necessary to get Federal Power Commission licenses for the new work, and to get the FPC licenses on existing P.G.&E. plants extended for the life of the agreement.

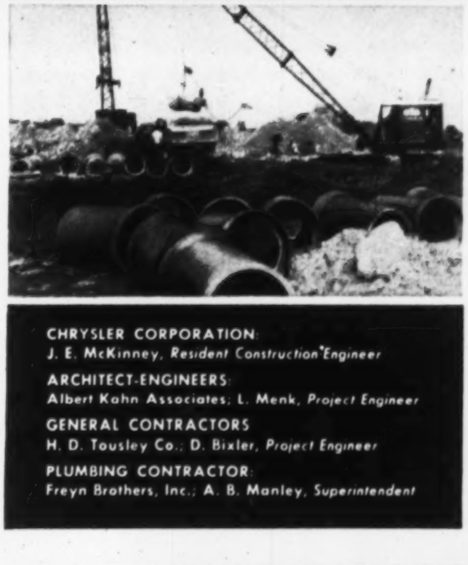
Based on the annual $2,204,000 payment, district voters endorsed a bond issue for $52 million. In actuality, half of the bonds are backed up by the Oakdale Irrigation District and half by the South San Joaquin Irrigation District, but the sole security for the bonds is the P.G.&E. payment contract.

• First bids—During the time while the necessary licenses were being obtained and the financing organized, detailed plans were prepared for the project. George E. Goodall Co., of Sacramento, prepared plans for Donnells Dam and for raising Goodwin Dam. All other phases of the work were designed by International Engineering Co. of San Francisco.

First bids were opened in April, 1953. But a sudden rise in the interest rates on bond money made it impossible even to call for bids on bonds.

It is hard to describe the bitter disappointment that resulted from this

IT'S CLAY PIPE FOR CORROSIVE SERVICE IN NEW AUTOMATIC TRANSMISSION PLANT



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. . . Twice Stymied in Finance Stage, Project Is on the Move at Last

FILL OPERATION at Beardsley Dam is program's most advanced stage and has a chance for completion in the 1956 season.

turn of events—particularly for the farmers who looked forward to improved water deliveries. However, district officials were not defeated. They investigated all possible solutions. They even managed to get a bill introduced in Congress which would provide a $10.4-million interest-free loan covering the irrigation aspects of the work. But that effort failed, as did others.

Just before first bids were opened, the districts employed B. W. Goodenough as construction engineer. Goodenough is an experienced dam-builder who has seen important service on such projects as Hoover and Shasta Dams. In 1954 he was placed in full charge of the project. Working with financial people, lawyers, engineers and district directors, some new ideas were generated.

• Second bids—Goodenough and his advisors made a decision to split the project into two parts. One part would include Beardsley and Donnells Dams which account for some 90% of the power but only 80% of the cost. Then when power revenues became assured, the district would go ahead with Tulloch Dam, which was necessary for water supply purposes. This, of course, required an amendment to the agreement with P.G.&E. And new licenses were needed, as original FPC licenses required start of construction within two years.

It was also decided to extend the allowable construction time of these upper units from three to four years because some contractors had complained of the short construction period. This required revision of a state law that limited the interest period during construction to three years.

The bidding was split in two parts, one covering Donnells Dam, powerhouse and tunnel and the other including Beardsley Dam. The original bidding in 1953 had the work split into about six schedules. Thus, a contractor in bidding didn't know in how many of the schedules he would be low.

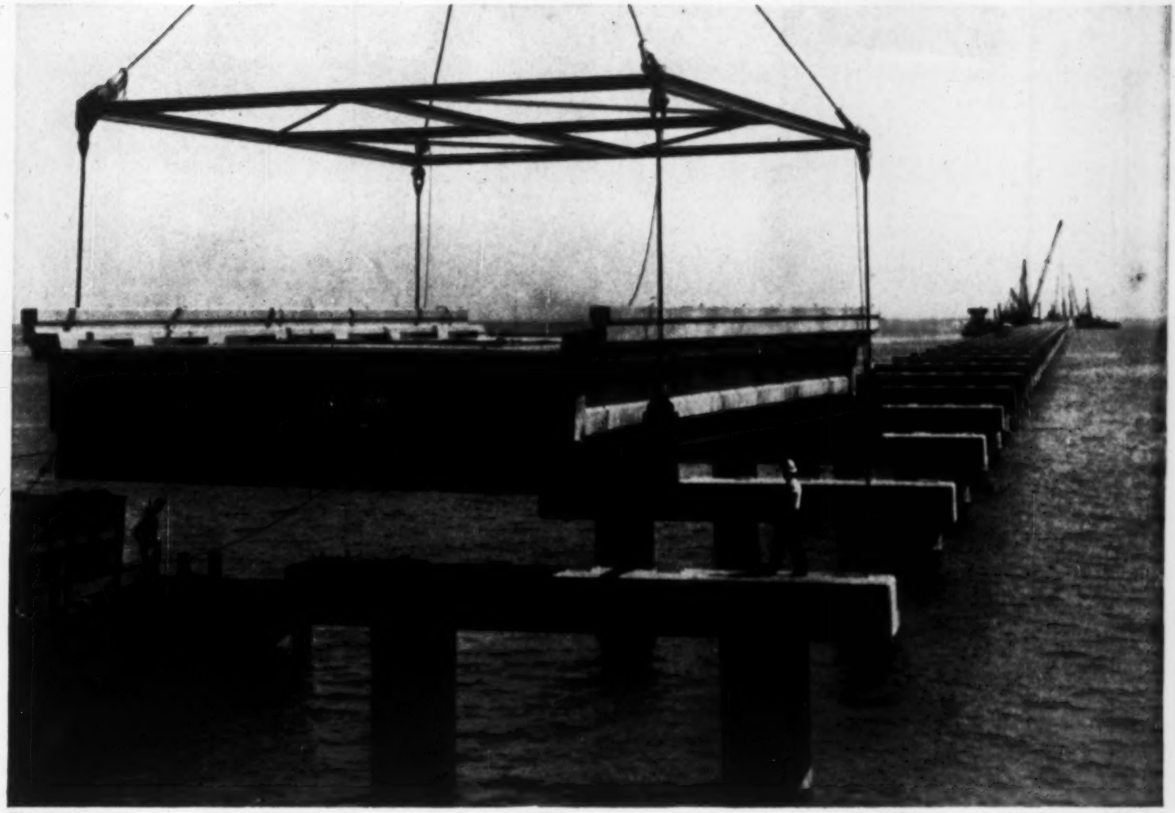
In addition, a limit was placed on the amount of money available for the upper work. In other words, the contractors were told that only so much money was available, and the successful contractor had to guarantee to finish the work at a final cost not exceeding this amount even should unforseen things happen.

As a further safeguard, the districts took out insurance against there being insufficient flow in the Stanislaus River to permit the storage of minimum amounts of water required for obtaining initial P.G.&E. payments.

In April, 1955, the second bids were opened. The lone bid for the upper work totalled $32.9 million. The contractor included a ceiling of $33.69 million, which was more than the districts felt could be obligated for this work. The bid was rejected.

• Third bid—The work was re-advertised almost immediately so that the 1955 construction season would not be lost. Three changes were made: Funds available for payment were increased by $1 million. The entire upper works was lumped into one bid. And the successful contractor was offered a bonus equal to the power earnings received if the project was in operable condition earlier than the December 15, 1958, completion date.

At the third bid opening in May, 1955, a combination known as Tri-Dam Constructors (headed by Morrison-Knudsen Co., Inc., and including Macco Corp., Peter Kiewit Sons' Co. and Stolte, Inc.) submitted the low bid of $31.2 million. This was well within the money available and only



This 180-ton precast, prestressed concrete deck section is being lowered into position on pile caps that are supported on hollow 54" prestressed piles. There are 2,235 of these deck spans on the 24 mile causeway across Lake Pontchartrain near New Orleans.

Why They Used Plastiment in the World's Longest Highway Bridge...

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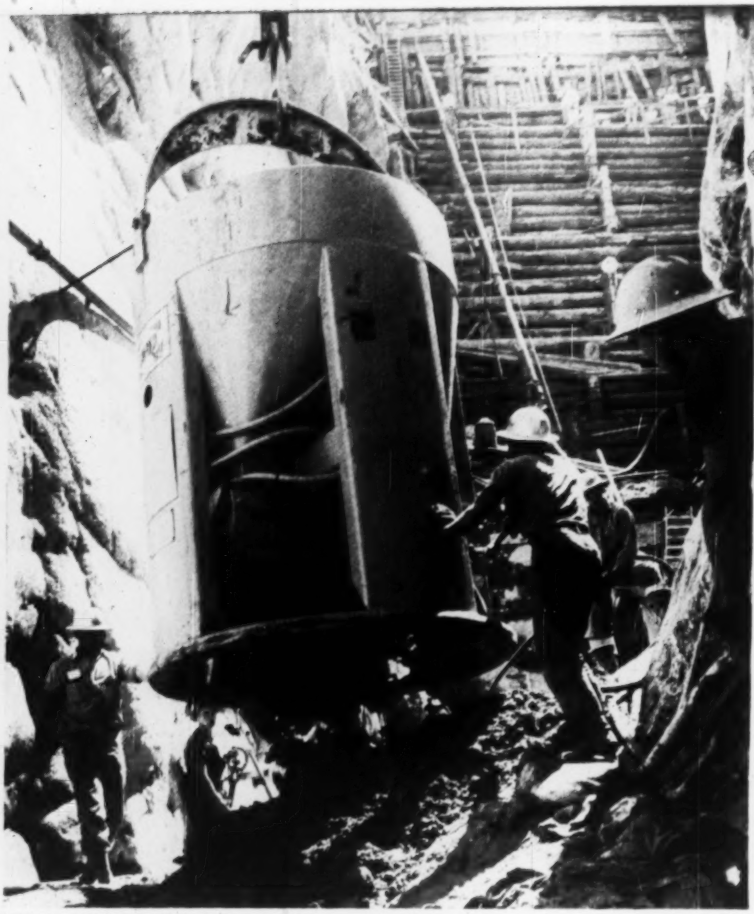


FIRST CONCRETE at Donnells Dam is placed, at bottom of 200-ft-deep foundation excavation, by this 4-cu-yd air-operated bucket.

$47,000 below the second low bid. Two days after the opening of construction bids, bids for $41.5 million of bonds were opened. Low bid was a favorable 3.05% interest rate. Construction and bond bids permitted the work to get under way.

With the favorable bids, the possibility of immediate construction of Tulloch Dam was re-evaluated. This resulted in the October, 1955, bidding, with Arundel Corp. and L. E. Dixon Co. low at $8.3 million. This, too, was well within the available money and was followed by selling the remaining $10.5 million of bonds at the same interest rate. So, after 30 years of planning and 7 years of intense effort, the project was under way.

• **Donnells Dam progress**—Construction on Donnells Dam has advanced to the point where first dam concrete was placed in July (some concrete is already in place in the spillway). Major problem at Donnells has been excavation of streambed gravels to bedrock. This has required a hole almost 200 ft deep. The Cofferdam protecting the hole is simply a facing of the natural material by a combination of timber and cables. The natural formation is relatively tight, but not suitable for an arch dam foundation. Tightness is indicated by the fact that the contractor is keeping the hole dry by use of two 4-in. pumps.

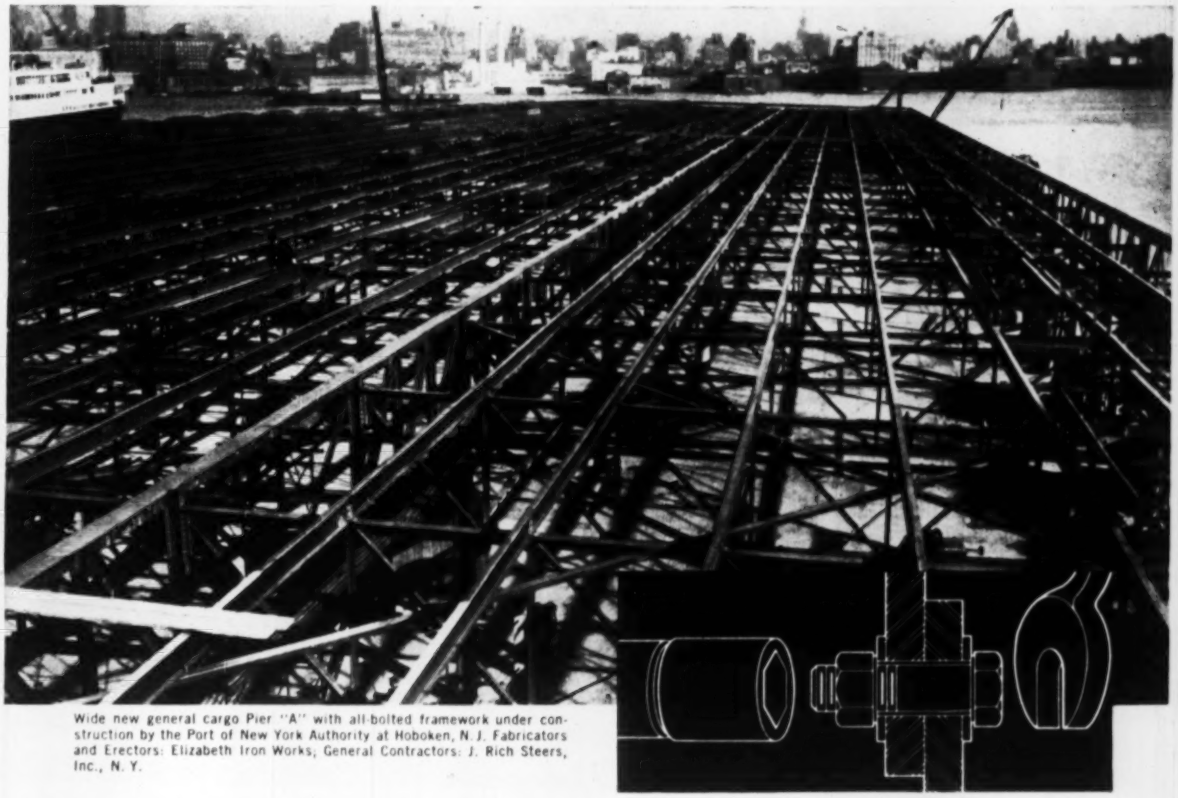
Bottom portion of the dam will be merely a concrete plug filling the deep excavation. Then, at about streambed level, the concrete arch structure starts.

As might be expected, concreting at Donnells Dam is a cable-way operation. The cableway has been completed in time to assist excavation of the deep foundation.

The concrete is required to be less than 45 F when placed in the structure. The low temperature will be obtained by air cooling the aggregate. This makes use of cooling pipes in the concrete unnecessary.

Present plans call for concreting to be continued into the winter. Some precautions may be necessary to protect the concrete from freezing at the nearly mile-high elevation.

Meanwhile, work has been progressing on the 7.2-mi Donnells tunnel, with construction substantially more than half completed. The tunnel will have a concrete paved invert. And



Wide new general cargo Pier "A" with all-bolted framework under construction by the Port of New York Authority at Hoboken, N. J. Fabricators and Erectors: Elizabeth Iron Works; General Contractors: J. Rich Steers, Inc., N. Y.

BOLTS cut erection time 33%

RB&W High Strength Bolts save weeks on pier framework ...also cut construction costs

ALL connections in the steelwork of the 227,000 sq. ft. Pier "A" at the Hoboken-Port Authority piers were completed by Elizabeth Iron Works within two months. That's a month less than for a similar pier erected the previous year without benefit of high strength bolts. More than 13,000 RB&W high tensile bolts were used to connect 1200 tons of structural steel. (Where high clamping force wasn't required, RB&W standard machine bolts were used.)

With the same number of men, production in the field averaged about twice that of riveting under similar conditions. This faster erection saved about 25% in costs, too.

Once tightened to recommended minimum tension, RB&W high strength bolts *stay* tight. Stronger in shear and in tension under all types of loads, they are approved by the AISC for use in place of rivets anywhere . . . in buildings, bridges, equipment.

Dependable RB&W high strength bolts have uniform high quality and assemble easily. Send for this Bulletin HS-1 which gives all the information a man needs to work expertly with them. Ask for as many copies as you can use.

Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y. *largest independent producer of high strength bolts for construction.*

RB&W

111th year

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in place
in seconds!

LABYRINTH WATERSTOP after first pour has been made and form removed. The grooves receive the concrete from the second pour, providing an interlocking joint.

Just a few seconds were needed to nail this LABYRINTH WATERSTOP to the form . . . just a few seconds and water seepage worries were over before they could ever have a chance to start.

LABYRINTH WATERSTOP forms a waterproof bond between two pours. The corrugated ribs bond firmly with the concrete.

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LABYRINTH WATERSTOPS are easy to work with, can be cut to any desired length. "L" and "T" joints can be welded with just a hot knife. Find out now how your costs can be cut . . . and end your seepage problems. Just mail the coupon to:

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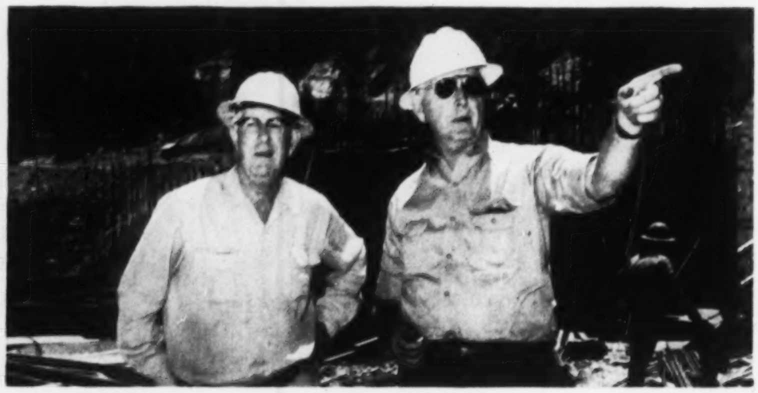


PROJECT MANAGER for the Irrigation Districts is B. W. Goodenough (left) who heads forces of Tudor-Goodenough Engineers on the work. A. H. Griffin (right) is resident engineer on Beardsley Dam.

some very short sections will be fully lined. This concreting work is just getting under way.

The first penstock sections are being delivered, and installation work should be well advanced before winter makes operations difficult. Should no unforeseen difficulties be encountered, Donnells Dam and powerhouse should be completed and in operation by late next year—a year early.

• Beardsley Dam—The second dam on the project may well be completed even sooner. The contractor is making a concentrated effort to put in the entire 3,300,000-cu-yd Beardsley Dam fill during the 1956 construction season. So the dam should be completed up to spillway level by winter. Finally, completion of the dam this season would assure storage next season for power generation late in 1957.

To complete the work this year, Tri-Dam Constructors is geared to place some 20,000 cu yd of fill a day. Borrow areas are conveniently located in the reservoir area only about a mile away. Impervious fill is developed by an elevating loader and miscellaneous fill is a truck-and-shovel operation. Rock blanket material comes from spillway excavation on the right bank.

• Tulloch Dam—Although the contract for Tulloch Dam was awarded more than a half year after the contracts for Donnells Dam, first concreting will occur in August, just a few weeks after first concrete at Donnells. Main reason is that development of access roads and excavation to suitable foundation was simpler.

One might expect that concreting for a 1200-ft gravity dam would be handled by either truck or trestle. But concreting at Tulloch will be a cableway operating using a fixed tail-tower and a moveable head-tower. Reason is that Arundel-Dixon had a cableway available for use.

Aggregate for Tulloch comes from a privately owned pit some 11 miles away. The truck haul will be geared to concreting operation, with minimum storage at the dam. And the rock will not be rescreened. The contractor expects to place the 230,000 cu yd in about a 13-month period. The only temperature control is a prohibition against pouring when the ambient temperature exceeds 95 F.

The Tulloch work also includes revisions to Goodwin Diversion Dam where water is diverted for irrigation use.

• Joint ventures—Supervising the construction for the Oakdale and South San Joaquin Irrigation Districts is a joint venture of Tudor Engineering Co. and B. W. Goodenough, known as Tudor-Goodenough Engineers. B. W. Goodenough is project engineer, S. R. Overholser is assistant project engineer and Verne Glasscock is office engineer. Resident engineers are T. W. Grover at Donnells, A. H. Griffin at Beardsley and Neville Long at Tulloch.

For the joint venture headed by Morrison-Knudsen, the work has been divided into two separate organizations—one at Donnells and one at Beardsley. At Donnells, E. C. Shipp is administrator, D. M. Drugan is office manager, S. Piedmont is in charge of dam construction, J. L. Wixson is in charge of powerhouse construction and P. M. Lee is in charge of tunnel construction. At Beardsley, O. H. Tucker is project manager, and B. L. Perkins is superintendent. At Tulloch Dam, for Arundel-Dixon, E. R. Snider is project manager, R. H. Miller is excavation superintendent and Bruce Gibson is project engineer.

"WEATHER-PROOF" YOUR PUBLIC WORKS WITH STEEL PIPE SNOW AND ICE MELTING!

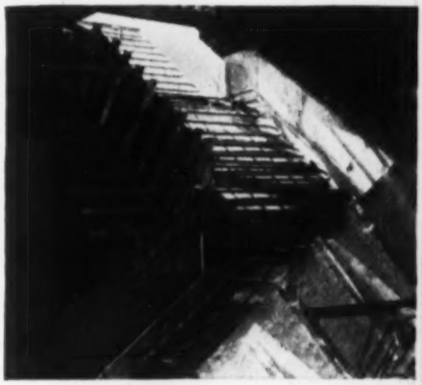
No "traffic" handling public works of the future will be really modern without provision for "automatic" removal of snow and ice!

Pedestrian, vehicular, or airborne, it doesn't matter . . . the increasing volume and peak load conditions imposed by today's and tomorrow's traffic, demand uninhibited "flow" at *all* times.

So it is that public planners and engineers are turning to steel pipe snow and ice melting systems for such great projects as in the ramp and stairway of the Staten Island Ferry Building, the Indiana Turnpike interchanges, the sidewalks around great new buildings, on bridge floors, airports, congested city street crossings, elevated approaches and ramps.

Steel Pipe is first choice for these installations because its known economy makes investment in "automatic" melting economically practical. Add the advantages of formability, workability, weldability and reliability and you know why steel pipe is the most widely used in the world . . . for snow melting, radiant heating, plumbing, fire sprinkler systems, power, steam and air transmission.

Send for the free 32 page booklet "Steel Pipe Snow Melting and Ice Removal Systems"



Even the open stairway of the Staten Island Ferry Building is "snowless" . . . each step-tread concealing one length of 1" steel pipe to melt snow and ice.

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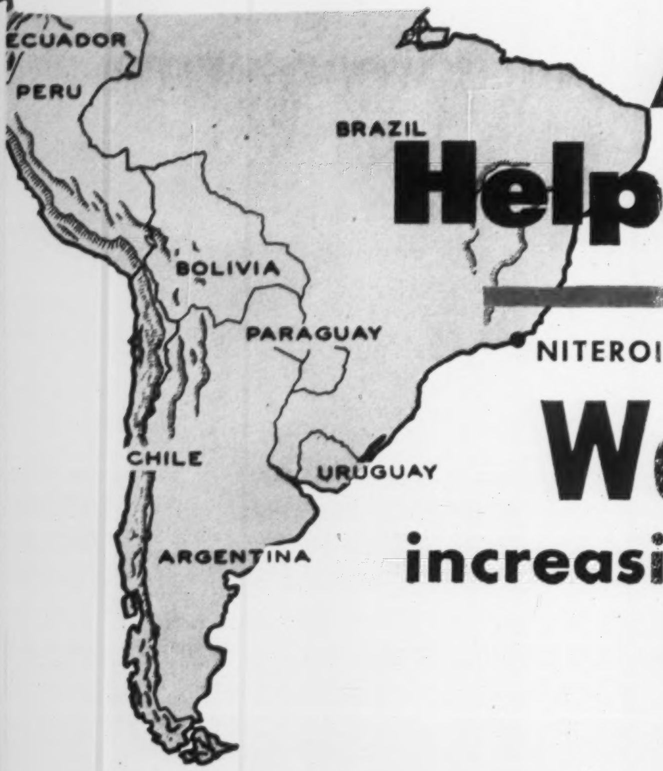


Allis-Chalmers Helps Increase Water to meet increasing needs of Niteroi, Brazil

Across the bay from Rio de Janeiro, the busy waterfront city of Niteroi and its suburban areas needed more and better water to meet growing industrial and metropolitan requirements.

Untreated water was furnished from protected reservoirs — top capacity was 4500 gpm for almost 300,000 population.

Because of this, a new water system was installed, including a complete treatment plant and reservoir, with a direct-fall supply to the city in potential capacity of 16,000 gpm — an increase of over 250%. At present the system is putting out 9500 gpm, at an average 100 lb pressure, pending improvements in city mains and sewer system.

Two pumping stations supply Niteroi: Imunana, a new site on the river; and Laranjal, handling water from the mountains. Allis-Chalmers pumps, motors and control, installed and operating at both stations, furnish the greatly increased amount of water needed to meet the requirements of the new water system.

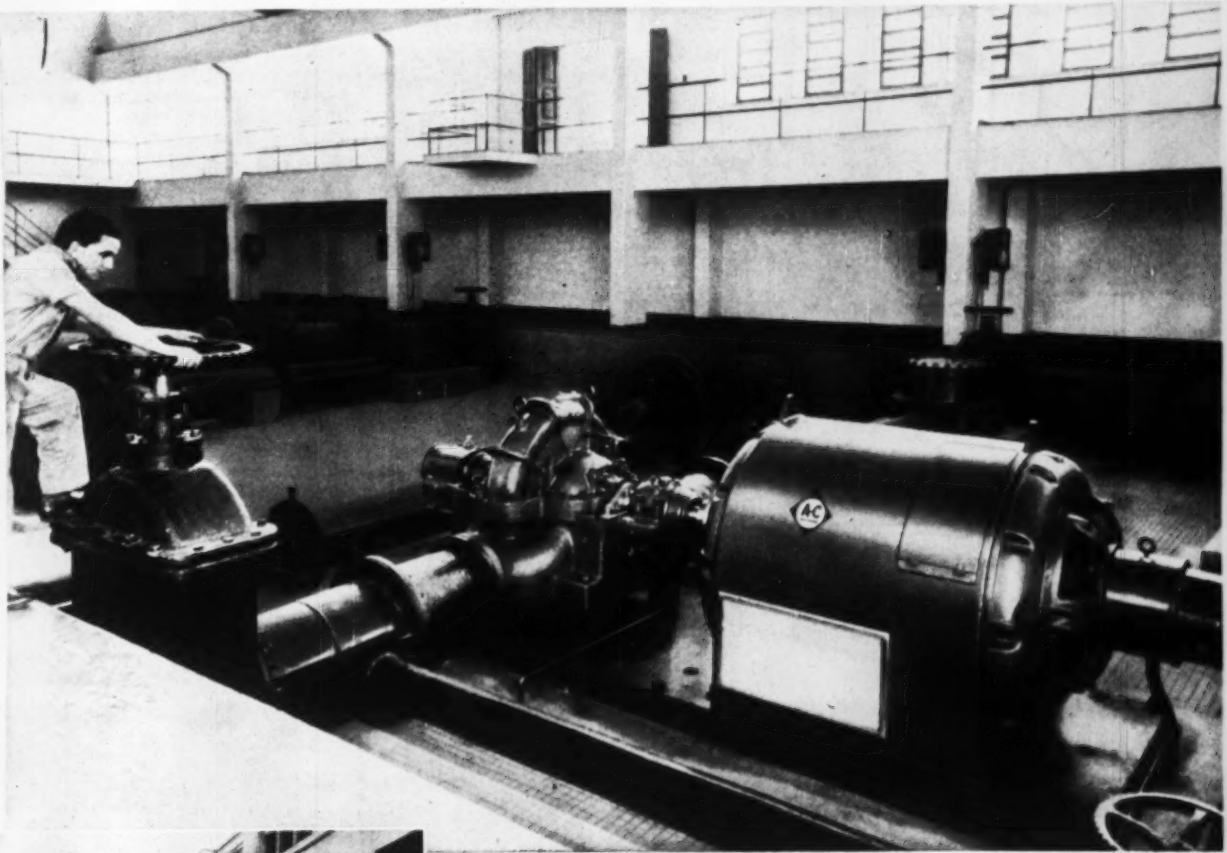
When YOUR CITY plans expansion or modernization, do as progressive communities all over the world are doing — call your nearest A-C office or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. A-4951

ALLIS-CHALMERS

Allis-Chalmers control lineup at Laranjal Station features three Type HARS-70 starters, used with synchronous motors. Starters at Imunana Station are identical, used with Allis-Chalmers 500-hp end-shield bearing synchronous motors.

ALLIS-

Equipment
Water Supply 250%



Three Allis-Chalmers 16 by 14-inch Type SI pumps, rated 7926 gpm, 295-ft head, are driven at 1200 rpm by Allis-Chalmers 800-hp end-shield bearing synchronous motors with new drip-proof construction. Laranjal Station is pictured — equipment installed at Imunana is similar.

Exterior view of Laranjal Station of the Niteroi water works. This contemporary building contains pumping station and operation offices. Modern housing units were built at each station to accommodate operating personnel and families.

Allis-Chalmers Builds the World's Largest Range of Equipment for Public Works

Pumps; motors, *Texrope* drives, control; switchgear, substations, transformers; butterfly valves; steam turbine-generator units, condensers, hydraulic turbines and generators, engine-generator units; blowers, compressors, vacuum pumps; dryers, screens, mills, sifters; tractors, graders, scrapers, motor wagons, power units.

Texrope is an Allis-Chalmers trademark.

CHALMERS

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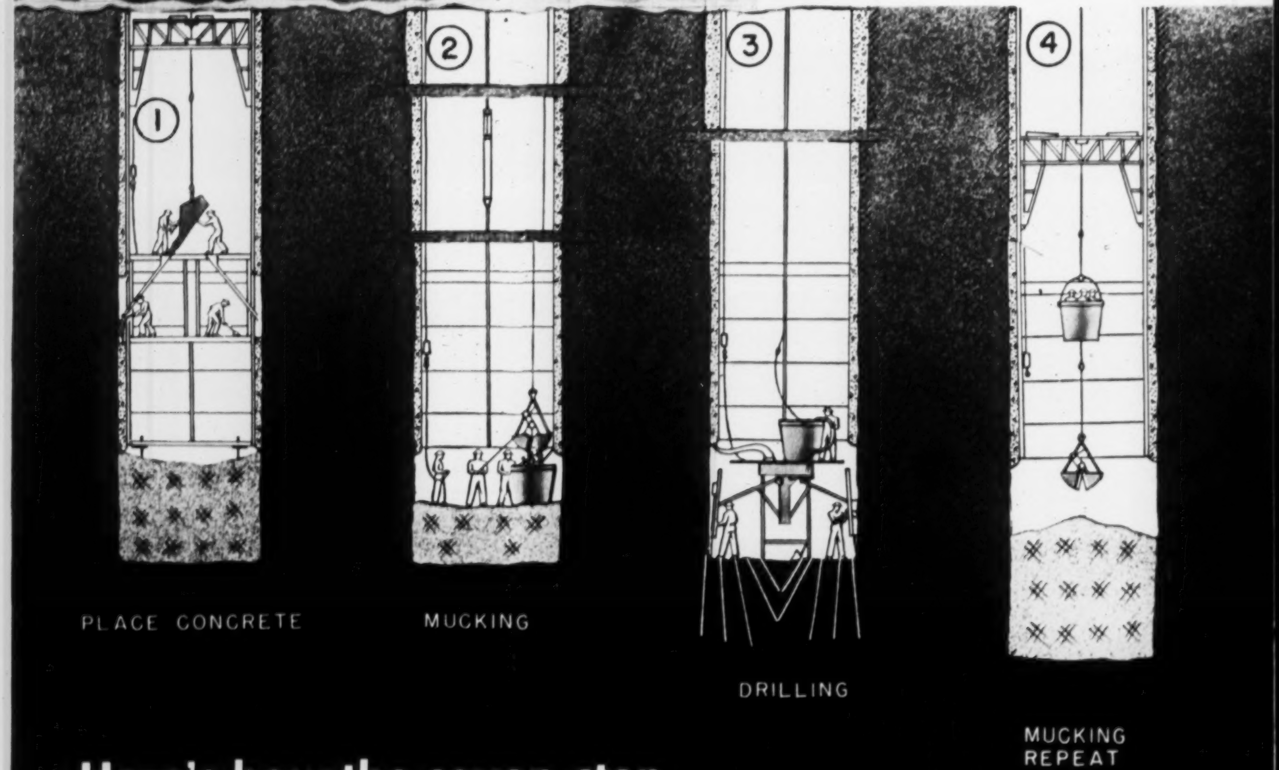
Modified Method Speeds Contract

J. A. Lilly
Project Engineer
McKenzie & Whittle Contractors

Work is rapidly approaching completion on the deepest pair of potash mining shafts yet constructed in the Western Hemisphere. Scene of the project is Carlsbad Basin of New Mexico. Rewriting the story of shaft sinking in terms of dollars and depth, the team of McKenzie and Whittle Contractors has pushed two 15-ft ID concrete-lined shafts toward the final depth of 1,886 ft, and done so with notable speed and efficiency.

The successful joint bid had plenty of competition from a dozen other contractors, and the contract, based on unit prices, was awarded by National Potash Co. last spring. Since that time, a seven-step construction scheme has utilized maximum mechanization with simplicity and repetition to set an



Here's how the seven-step operation works

for Deep Mining Shafts

outstanding record of shaft length per man-hour.

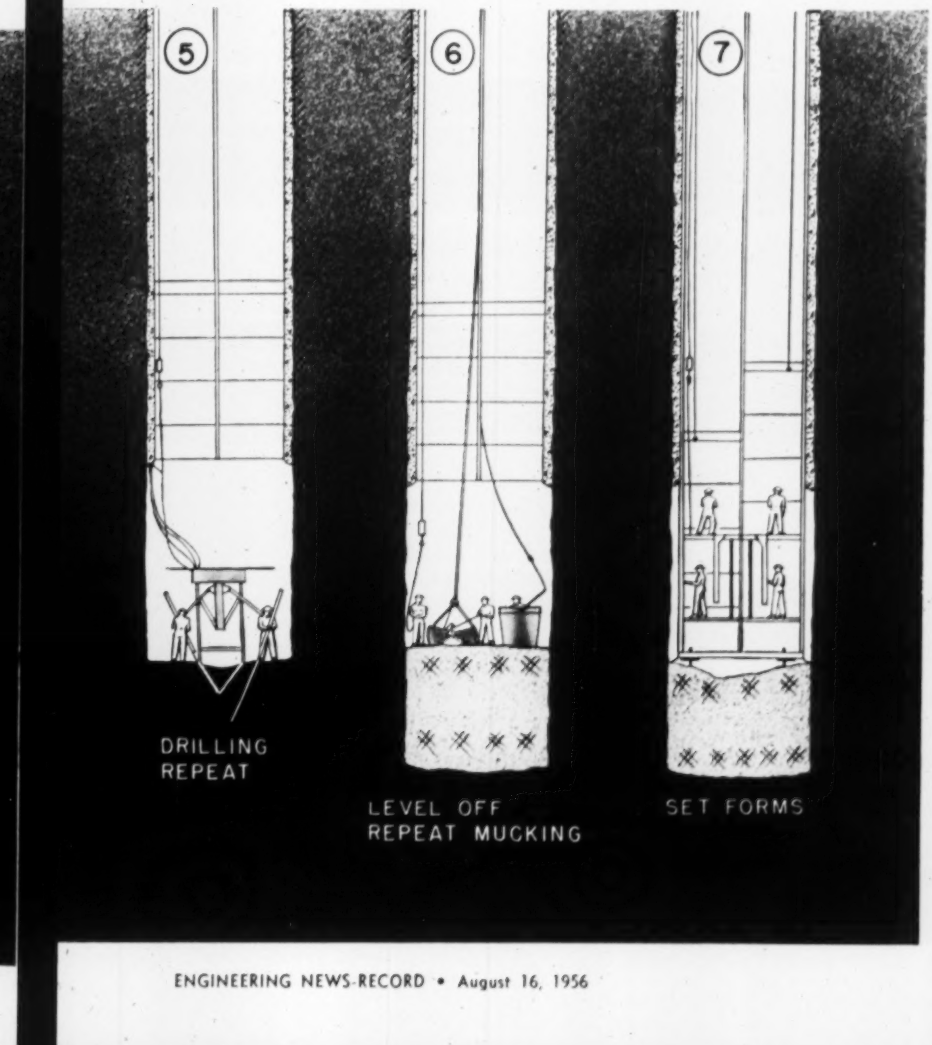
The McKenzie-Whittle system shown in the accompanying operational sketch was carried out as follows, picking up the cycle at the concrete-placing step:

1. Placing of Concrete—In placing a 20-ft section of shaft, the position of the work deck is varied to place the concrete at three different elevations of form ports. A 4-cu yd hopper is used to supply a 1½-cu-yd laydown bucket, allowing a rate of placement of 20 cu yd per hour. A single pneumatic vibrator was found to provide adequate consolidation.

With the pour completed, the entire assembly is removed from the work shaft with the exception of the forms, which are left as protection for the newly placed lining. Incidentally, all pipes to be used in the completed shaft by the owner are installed in the concrete lining.

2. First Muck Step—A ½-cu yd clamshell is used to load a pair of 76-cu ft muck buckets. The operator controls the clamshell through a panel board connected by relays and solenoids to an air hoist. He is assisted by two miners whose job it is to control the tagline ropes.

3. First Drill Step—Steel rounds activated by drill feed motors and a hydraulic actuated boom, are used in the drilling operation. An accurate "V" pattern of 68 holes is drilled with 6- and 12-ft lengths of steel. The pattern is charged with a string loading of 12 sticks to the hole, and fired with 6 periods of single millisecond delay. By this method, a depth or "pull" of 10 ft is successfully displaced.



4. Second Muck Step—A rounding or "swell" about 5 ft high, remaining after the drilling and firing phase, is removed as in the first muck step.

5. Second Drill Step—Similar to the first drill step, this phase is initiated from a level about 22 to 25 ft below the bottom of the next highest lift, or 2 to 5 ft below the bottom of the lift being prepared for lining.

6. Leveling-Off Step—Employing the usual mucking tools, the bottom of the lift to be lined is struck off level, one foot below bottom of the new life.

7. Setting of Forms—The work deck is loaded with the various pipes and guide beams to be installed in the shaft, and with the template that will be used to set the forms. The deck is lowered into the shaft, guide beams and pipes hung from those above, and the template set in place. After the beams and pipes have been centered and plumbed, jacks are used to fix the template in true alignment.

Forms are then lowered and joined at the template. With the forms properly positioned and wedged, the work cage is hung from guide beams above and the hoist rope is sent to the collar of the shaft for the concrete bucket, ready for the pour.

Employing the above system, McKenzie-Whittle has achieved a progress rate of 40 hours per lift (20 ft of shaft, concreted). Average rate for the entire job is 50 hours per lift.

The operation was developed with a weather eye to safety—and it worked. One feature that contributed to a safe job, besides installation of all pipes in the shaft lining, was use of heavy (½-in. and ¾-in.) steel forms following right behind each lift of excavation. The integral guide beam served as a supporting crosshead and equipment guide, and made hoisting easier and safer. Also, safety precautions were found to enhance greatly the economic aspect of the project.

The total force for the two shafts, working around the clock six days a week, was as follows:

Supervision and management:

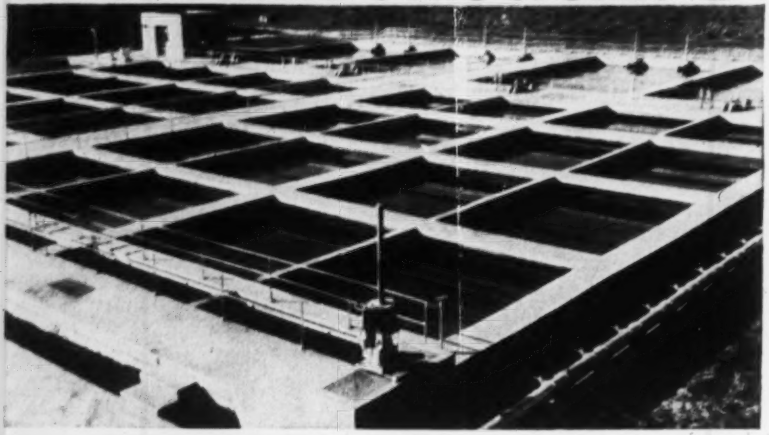
1 Project engineer
1 Shaft superintendent
1 Equipment superintendent
3 Assistant superintendents
1 Office manager
1 Clerk

Direction, production:

6 Mine foremen
6 Hoist operators
6 Mucker operators
24 Miners
6 Toplanders

(*Continued on page 54*)

Water Leakage Problems IN CONCRETE STRUCTURES?



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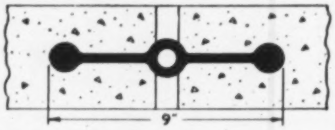

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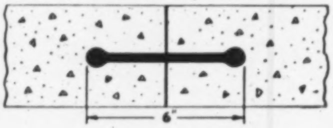


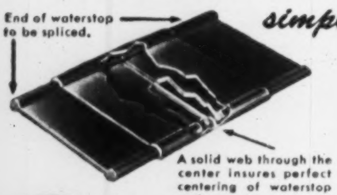
SPLIT TYPE WATERSTOP

faster, easier installation

A new Servicised development already in wide use because it reduces installation time and cost by eliminating splitting of form. One half of width is split to permit fastening to inside of bulkhead in the form of a "T." After section is poured, form is removed and divided sections are joined together by stapling. Pat. Pend.

WATERSTOP UNION

simplifies Field Splicing


End of waterstop to be spliced.
A solid web through the center insures perfect centering of waterstop ends.

Permits a faster, simpler method of field splicing, using only rubber cement. The union is hollow and is made from rubber meeting the same specifications as the waterstop. Available for splicing 6" and 9" Dumbbell and 6" and 9" Hollow Bulb Waterstops. Pat. Pend.

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- 3 Yard mechanics
- 3 Compressor operators
- 3 Electricians
- 1 Oiler
- 1 Apprentice mechanic
- 1 Concrete-truck driver
- 1 Laborer

• **Job-engendered comment**—Acknowledging the fact that no two jobs are directly comparable, McKenzie-Whittle credit their outstripping of previous progress in the Potash Basin to the setting-up of the job on a competitive rather than cost-plus basis. This forced mechanization and productive work procedure.

Speaking generally, however, from a background of 41 years in the construction business, we believe that shaft sinking remains, with few exceptions, quite primitive. Whereas in other types of construction, the use of machinery is pushed to the utmost. Man's broad back remains supreme as the shaft sinking tool. And as a result increased labor costs have taken their toll in reduced production.

Only in shaft sinking can higher-labor costs be directly tied in with a drop in output and efficiency. While sinking rates in this country have fallen from 400 ft per month in the 1920's, to 200 ft or less today, the rates in cheap labor countries have increased steadily to better than 700 ft per month. When South Africans with long-handled shovels can do a job three times as fast as the best American rate, it is high time for us to take notice.

Treating shaft sinking as a very specialized venture, the construction industry has been slow to apply even the conventional tools therein. Clamshell and grapple systems and overhead cranes are so relatively new in application that patent fees are still chargeable in underground installations.

It is also to be noted that mining concerns wouldn't dream of building their own access railroads, have long found it expedient to sink their own shafts. Placed in a "Caveat emptor" position by the small number of contractors professing experience in this field, they have balked at the prospect of cost-plus contracts usually demanded.

An interesting result of the above situation is seen in the fact that the introduction of shaft freezing techniques was conceived by a mining concern rather than by a contracting agent. It would seem that wider exchange of information and increased interest by general contractors in the field of mine shaft sinking would benefit all concerned.

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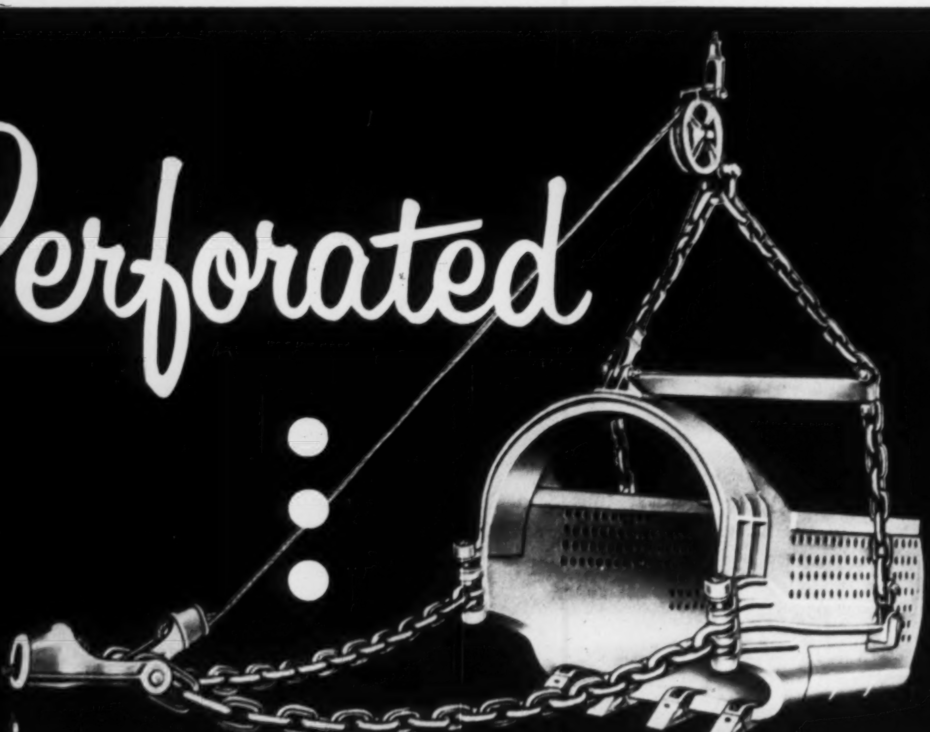

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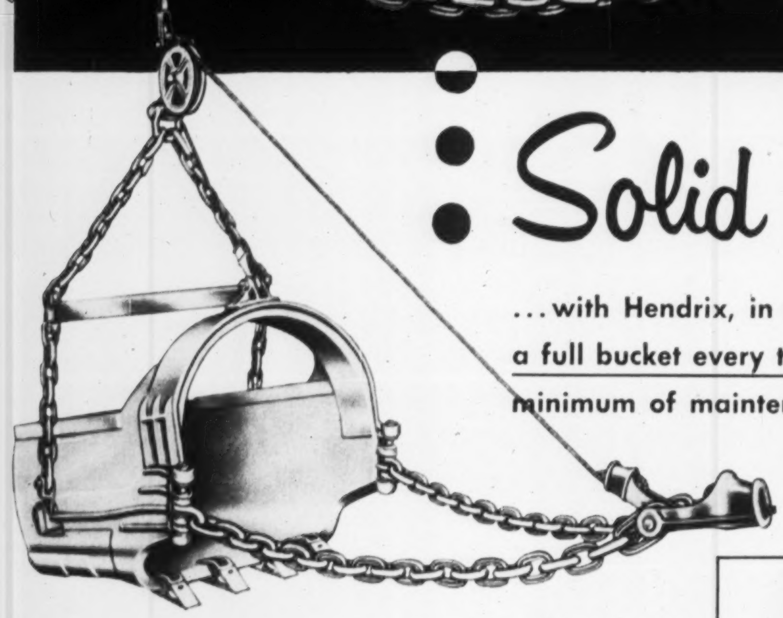

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A TYPE FOR EVERY DIGGING PURPOSE

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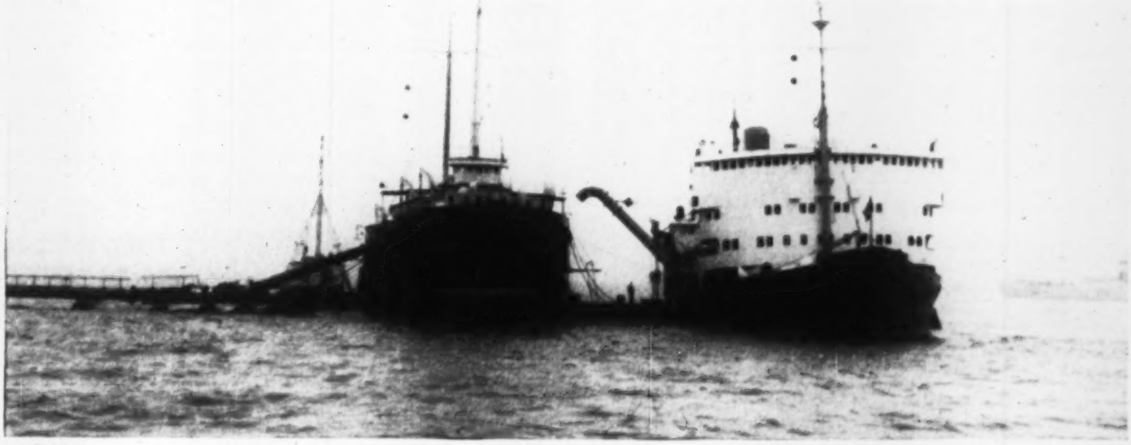
Lightweight
DRAGLINE BUCKETS

BEFORE

Hopper dredges would dump silt, dredged from middle of Delaware River, into shallow basins close to shore. Then silt would be rehandled by floating pipeline dredges to spoil areas ashore.



NOW By pumping hopper-dredge loads into floating sump rehandler, loss of silt back to river is stopped, cost is halved.

Floating Sump Halves Dredging Costs

Ralph T. Klotz
Formerly with Philadelphia District, Corps of Engineers

By pumping hopper dredge loads into floating rehandlers equipped with high-head pumps, the Corps of Engineers Philadelphia District has doubled the efficiency of its Delaware River channel maintenance operation in the past year.

Formerly, hopper dredges, after picking up silt from the middle of the river, bottom-dumped near the banks. Pipeline dredges then picked up the material for a second time and pumped it to disposal areas. Rehandling was necessary since the hopper units are equipped with low-head pumps, but the second dredging operation by the high-head units was obviously inefficient, particularly in view of solids lost in the process.

A specially converted hopper dredge, which can be moored at key points along the Delaware, now receives a pumped discharge from its more normal counterpart and repumps to disposal units ashore.

The story can be told in terms of the retired hopper dredge New Orleans, now rechristened as a so-called sump rehandler. The conversion involved interconnecting the ten bins of the New Orleans to a common suction line and installing a pair of 28-in. rehandling pumps driven by four 1,500-bhp motors. With 6,000 bhp available in series, the pumps combine to produce a line pressure of 215 psi. Diesel-driven generators supply power to pump motors. Generators, pump motors and diesel motors were salvaged from Navy war surplus.

A second phase of the revision concerned the off-shore rehandling sites. At each station, moorings were constructed for the rehandler and for docking the mobile hopper dredges. Each mooring consists of a pair of 25-ft-dia. sheetpile cylinders filled with granular material, plus concrete mooring post and a steel girdle to hold the shape of the cylinder at the top. The cylinders, spaced 209 ft c-c parallel to the flow line of the river, are equipped with oak pile and rubber fender systems.

Docking of the hopper dredges poses little difficulty. Despite the fact that operations are carried on day and night during all seasons, the average time for docking (without aid of tugboats) has been seven minutes. Even this short period is not lost time, since the transfer pipe is positioned while hopper eases alongside the rehandler.

With two hopper dredges serving the New Orleans, the Philadelphia District employs radio communication to minimize waiting time for the second feeder at the rehandling base. An average of 32 2-800-cu yd loads per day is delivered to the rehandler (material weighs 79 lb per cu ft). A peak rate of 50 daily loads has been attained.

A total of 15,550,000 cu yd of material has been pumped to spoil areas ashore during the first twelve months of operation—at a cost of $3.5 million. This is twice the volume formerly placed ashore for the same expenditure.

The Corps of Engineers is responsible for maintaining a 40-ft navigable depth in the Delaware River up to Philadelphia, a distance of 100 miles. Col. Allen F. Clark, Jr., is Philadelphia District Engineer.

Where do we stand on

In recent years, alloys of rubber with asphalt or tar have been widely studied, discussed and tested. However, there still is some question as to the practicability of this new concept in materials of construction. We would like to answer this question as far as anyone can.

WHO WE ARE—

We are Rubarite, Incorporated—the only company organized specifically and solely to further the use of bitumen rubberizers.

WHAT WE MAKE—

We manufacture several grades of RUBARITE and RUBARITE JETLOCK.

RUBARITE is a powder of unvulcanized synthetic rubber combined with minute particles of a special carrier. It flows freely, disperses rapidly and thoroughly in the bitumen to assure uniform and maximum improvement of physical properties.

RUBARITE JETLOCK is similar in nature, but is made with a nitrile rubber for maximum resistance to the attack of gasoline, jet fuels and other petroleum products.

WHAT OUR PRODUCTS DO—

Small amounts of RUBARITE or RUBARITE JETLOCK amalgamate quickly with the bitumen with these results: Increased toughness or strength. Better adhesion. Greater ductility and flexibility. Less susceptibility to temperature changes. Improved impact resistance, elastic recovery and mix stability.

In other words, in the laboratory, our rubberizers give every indication of making ordinarily good, basic materials even more serviceable and durable. And they are proving out, in the field.

WHERE RUBBERIZERS STAND, TODAY—

In asphaltic seal coats and hot mixes for roads, the use of rubberizers is progressing steadily. Over 1,100 miles of rubberized roads are in use today. We can cite a number of instances where rubberizers have more than proved their worth. There will be more—and both uses will accelerate—with the accumulation of time and service.

In airport surfaces, the attack of jet fuels and other petroleum products more quickly proves the advantages of RUBARITE JETLOCK. As a result, a number of installations have been made and product acceptance is excellent.

In playgrounds, the safety of a rubberized surface is readily proved. The test of durability takes time, but results, to date, have been most promising.

In other uses, rubberizers are already accepted in crack and joint fillers, sealing compounds and pipeline coatings. Other applications will follow as the technique becomes better-known.

WHERE WE STAND, TODAY—

We firmly believe in our products. Just as metals must be alloyed or gasoline must be supplemented with additives to meet certain of today's needs, so we feel bitumens can be improved by rubberizing for certain applications.

If you are interested in further information on how asphalt or tar alloyed with RUBARITE or RUBARITE JETLOCK can better meet today's needs, why not write today for the free booklet, "Bitumen Rubberizers." Samples and engineering assistance are also available. Address: Rubarite, Incorporated, 1702 Philtower Building, Tulsa, Oklahoma.

RUB

Rubarite, Rubarite Jetlock—T. M.'s Rubarite Incorporated, Tulsa, Oklahoma

for hot mixes

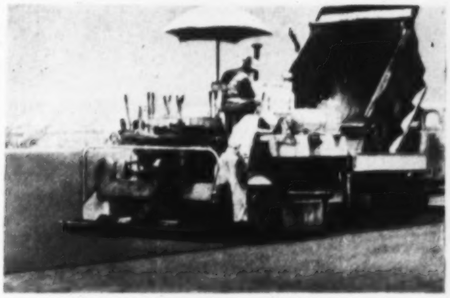
IN ASPHALTIC CONCRETE, RUBARITE increases the stability of the mix, permits advanced rolling, improves feather-edging, sets up faster into a paving that exhibits less stripping and pot-holing, reduced brittleness and cracking from impact at low temperatures, less shoving, rutting or bleeding at high temperatures, greater skid resistance and longer life.

rubber alloys

for seal coats

IN SEAL COATS and light surface treatments, RUBARITE permits construction in much cooler weather than regular bitumens, provides mats up to twice the usual thickness, imparts unusual retention of stone, and retains the volatile oils in the bitumen for longer life—all at surprisingly low cost, often at a savings in asphalt required and cover retained.

for airport paving



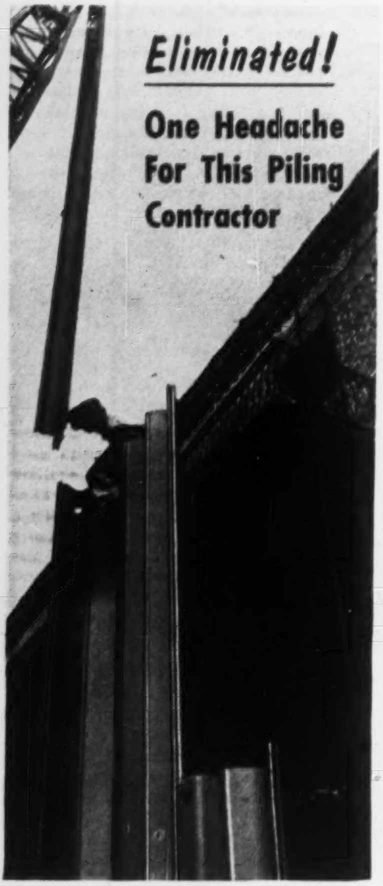
IN AIRPORT SURFACING, a protective course of RUBARITE JETLOCK hot mixed with tar, solved a serious problem posed by spillage of jet fuels and their consequent softening of the asphalt. RUBARITE JETLOCK has proved outstanding in combating this attack and providing a high degree of temperature stability plus the other advantages of rubberizing.

for other uses

IN OTHER USES, RUBARITE or RUBARITE JETLOCK improves toughness, strength, adhesion, flexibility and temperature susceptibility plus resistance to age, weather, chemicals and petroleum products to give better joint and crack fillers, sealing compounds and pipe coatings, may well do the same in a host of other asphalt or tar products.

ARITE INC.

Jointly Owned by
The Goodyear Tire & Rubber Company,
The National Lead Company and Bird and Son.



Eliminated!

One Headache For This Piling Contractor

Driving steel-sheet piling through silty material softened by heavy rains—he had to work in a narrow, twisting, busy street with no space for job-site storage, and as always, a heavy cost penalty for time lost. By renting his piling from L. B. Foster Co., he got deliveries *as needed*—delivered by Foster trucks over planned routes. All the headaches that could have been the contractor's were eliminated by using Foster's Piling Rental Plan.

Foster Piling Rental Plans are complete—for all types of steel-sheet piling (and lightweight piling). You get the right type, the exact section, the exact length . . . when you need it . . . and at low fixed cost. Ask your nearest Foster office for details and prices—see for yourself the savings in Foster's Piling Rental Plan.

STEEL-SHEET PILING • PIPE-FOR-PILING
H-BEARING PILE • LIGHT WEIGHT PILING
RAILS • TRACK EQUIPMENT
PIPE • PIPE FABRICATION

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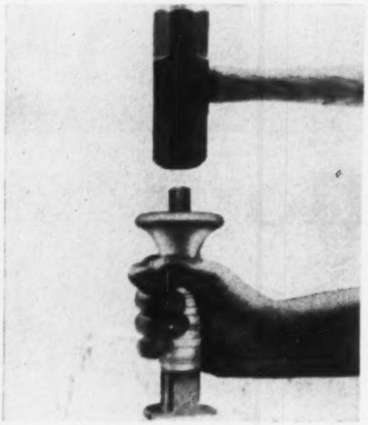
New Products



Hand Tool Aids Driving of Fasteners into Concrete

Another hand-powered device for driving fasteners into concrete and metal joins the parade with the introduction of Omark's Hammer Drive. Like the two announced previously (ENR July 12, p. 51), this one consists essentially of a barrel and piston. One end of the barrel holds the fastener while hammer blows on the piston projecting from the other end drive the fastener home.

The Omark tool makes use of a plastic washer to guide the fastener shank. The final hammer blow, however, smashes the washer, leaving a clean job.

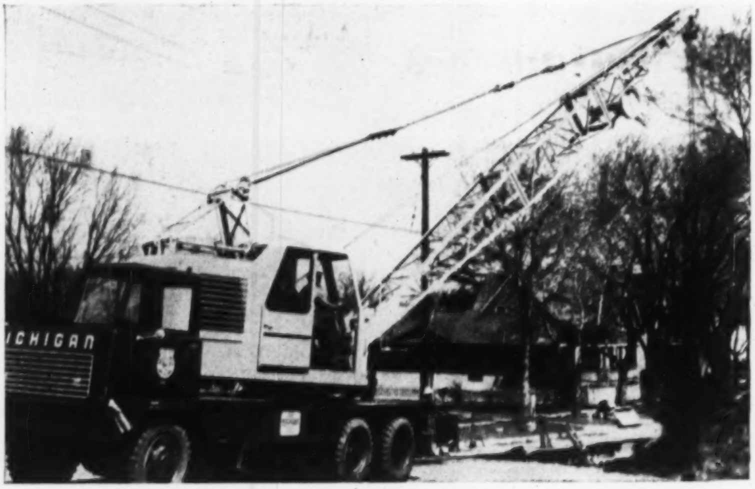
Fasteners for the new tool include headed pins in eight sizes from ⅝ in. to 3 in. long and threaded studs in 8/32, 10/24 and ¼-in.—20 sizes from 1⅛ in. to 2½ in. long. OMARK INDUSTRIES, 5001 S. E. JOHNSON CREEK BLVD., PORTLAND 6, ORE.

Ceramic-Faced Plates For Machinery Clutches

Clutch plates employing ceramic-type linings in place of conventional organic facings are now being manufactured by Lipe-Rollway for heavy-duty clutches on off-highway vehicles.

In addition to reducing downtime for maintenance, the new facings are said to have high resistance to heat and frictional wear, which gives them up to five times the life of ordinary facings.

The new ceramic friction material is compressed within shallow metal cups or buttons, with six such buttons comprising the facing on each side of the plate for clutches up to 14 in. LIPE-ROLLWAY CORP., SYRACUSE, N.Y.



Excavator-Crane Has 25-Ton Capacity

An increased rating to 25 tons and a new chassis incorporating the Clark power-train are features of the Michigan T-24 excavator-crane.

The machine has a gross vehicle-weight of 51,000 lb when equipped as a crane. This weight can be reduced to 41,500 lb for highway travel by removing rear outriggers, crane boom and counterweights. For steel erection, the T-24's maximum boom length is 100 ft, with jib booms 15 to 30 ft in length. All-wheel 6x6 drive is standard equipment, and riding qualities are said to have been improved through redesigned front axle overload springs. Clark Equipment Co., Construction Machinery Division, Benton Harbor, Michigan.

Tiny Roller Is Versatile

Poweroll, a new ½-ton roller complete with a 3-hp air-cooled engine, has been added to the line of products of Cleveland Formgrader. The new machine is made with a $\frac{3}{16}$-in., steel-plate roller-drum for general contractor use and in 10-gage drum thickness for lawn maintenance and landscaping. The machine rolls a 35-in.-wide path. It utilizes a chain drive with forward, neutral and reverse transmission. Easy to transport, it weighs only 500 lb when empty, and about 12,600 lb water-filled. Cleveland Formgrader Co., Avon, Ohio

Rock Bolt for Construction Has Forged Anchor Head

Said to be capable of sustaining a 40,000-lb pull when embedded in hard rock, a ¾-in. steel rock bolt with forged anchoring head and expansion shield is now available for tunnel work and general construction purposes.

Developed originally as a mine roof bolt, the new bolt has passed tests for pull-out registering 10,000 lb more than the showing of slotted type bolts and square head types with expansion shells, the manufacturer contends. The bolt provides support by tying rock together and is intended to provide maximum shoring safety in stratified and unstratified rock for ribs, walls and roofs in all types of tunnels, building foundations and other permanent construction.

The anchoring end of the bolt has a wedge head and shield, the exposed end is roll threaded. Republic Steel Corp., Bolt and Chain Div., New York City.

Reservoir-Type Pen Draws Square-End Lines

A new import from West Germany is a reservoir-equipped drafting pen called Grafika, made by Clemens Riefler. Five nibs, each adjustable within its own range of line thicknesses, produce lines from 0.1 mm to 2.8 mm thick.

The reservoir holds enough ink to draw a 1-mm line (roughly twice the thickness of the horizontal line at the top of this page) 700 ft long, according to the manufacturer. The complete kit includes a cleaner, carrying case and detachable plunger-type pump for filling the reservoir.

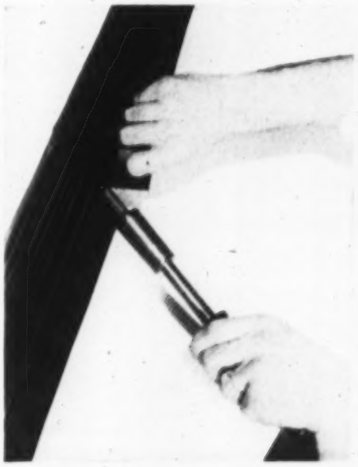
Grafika is said to join lines without making a thick spot, to terminate lines in right-angle ends, and to eliminate completely the danger of blotting from too-rapid flow. Quality British Corp. (Importers), 120 Liberty St., New York 6, N. Y.

Plastic Jointing Material Grooved to Grip Concrete

Plasti-Grip, made of extruded polyvinyl-chloride, can be used as an expansion joint, construction joint or waterstop. It comes in continuous strips 100 ft long and 5 or 6 in. wide. It is grooved to grip the concrete and has a U-shaped center pleat to permit expansion and contraction.

The plastic can be cut with a knife and spliced quickly with a hot iron. The manufacturer says it will take water pressure up to a 125-ft head, stay flexible in extremely low temperature and resist alkali and acid. Progress Unlimited Inc., 15 W. 44th St., New York 36, N. Y.

(*New Products continued on page 63*)



TRU-CURE GIVES YOU MAXIMUM WATER RETENTION

. Saves Time and Labor!

THIS CONCRETE WILL BE *STRONG* and *DENSE*. TRUSCON "TRU-CURE" PREVENTS EXCESSIVE MOISTURE LOSS IN THE EARLY STAGES OF CURING

Truscon "Tru-Cure" is a liquid curing compound for concrete. It permits *proper* curing by preventing moisture loss especially in the early hours immediately following the pouring of concrete. This is the real *danger* period when heat or air movement causes too-rapid evaporation, resulting in surface shrinkage and "checking."

You'll Profit From These Advantages, Too . . .

- **Saves clean-up after curing is done**
- **"Cures" at lowest cost per yard**
- **Requires minimum of equipment**
- **Protects against rain, sand and dirt**
- **Requires only one inspection**
- **Eliminates quick break-off of curing and sudden drying-out of surface**

Available in clear or light-reflecting pigmented types. Meets state and other governmental specifications.

SEND COUPON BELOW FOR FULL DETAILS

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Rush Tru-Cure Folder No. 841 to:
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One Man Runs This Vibrator...Anywhere

One man can run this Homelite High-Cycle Electric Concrete Vibrator anywhere . . . to place concrete faster, easier and more profitably than ever before. That's because he handles only the lightweight vibrator head and cable. The generator stays on the ground . . . or in any convenient spot within a 400′ radius . . . out from under foot and away from pouring operations. No special cradles or scaffolds are needed.

You can handle 30 to 40 cubic yards of 2″ slump concrete per hour with this powerful Homelite vibrator. Tough, kink-proof, handling hose goes anywhere . . . around corners, over obstacles . . . can't be injured by bending. Quick-connecting extension hoses let you work effectively in the deepest forms. The rugged, high-cycle motor built into the vibrator head will give long, profitable service at lowest maintenance cost. Carryable, 125 pound, Homelite generator supplies both high-cycle current for one or two vibrators *and* 110 V. DC current for your electric tools and floodlights.

NEW 115 VOLT AC-DC VIBRATOR

In addition to the high-cycle vibrator, Homelite also has a new 115 volt AC-DC vibrator for working concrete in small forms, reinforced concrete columns, and in other "tight spots". Weighing only 32 pounds complete, it can be carried and used anywhere by one man. It will operate from either standard, 115 volt "house" current or from a low-cost Homelite carryable generator.

Write or call your nearby HOMELITE representative today for a free demonstration.

Manufacturers of
Carryable Pumps • Generators
Blowers • Chain Saws

HOMELITE
a division of Textron Inc.
1108 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

Metal Cells Simplify Wiring in Concrete Floors

Type E-R Cofar has been developed to make it easier to install electrical wiring in reinforced concrete floors in office buildings. It is used in combination with Cofar, which serves as both a corrugated, light-gage steel form and reinforcing for concrete floors.

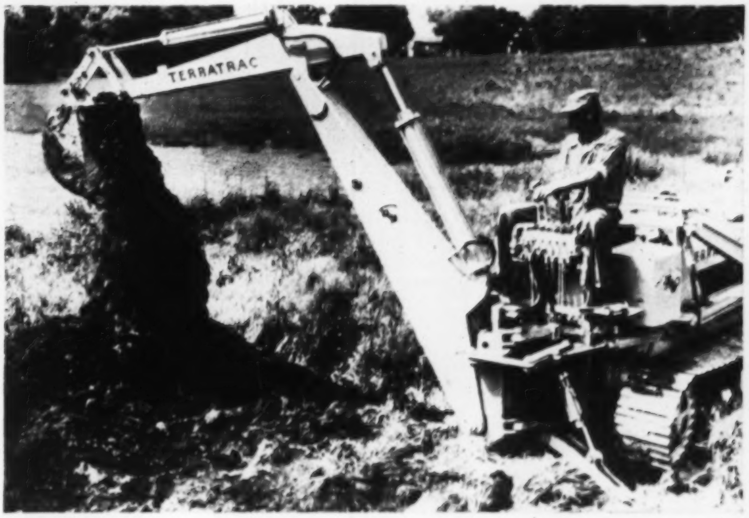
Type E-R has the same depth as Cofar but has wide troughs. These are capped to form cells in which wiring is inserted. The new units also have wires welded to each corrugation so that they can be used as a form and reinforcing. They are available in one, two and three-cell combinations. Troughs are made of 16 ga and cap plates of 18 ga galvanized steel. Standard header ducts connect the cellular units with wall panel boxes. Granco Steel Products Co., 6506 N. Broadway, St. Louis 15, Mo.

Conversion Kits Can Make Diesels Into Gas Burners

Conversion kits are now available for converting Caterpillar D386 and D364 diesel engines into gas-burning spark-ignition engines.

The kits can be installed only on counter-clockwise rotation engines not equipped with turbochargers or Roots blowers. Parts included in the kits are essentially the same as those used in the D397 and D375 spark ignition engines. Primary advantages for the converted engines include increased horsepower and lower operating costs, especially in areas where natural gas or other suitable fuel is available at low cost. Caterpillar Tractor Co., Peoria, Ill.

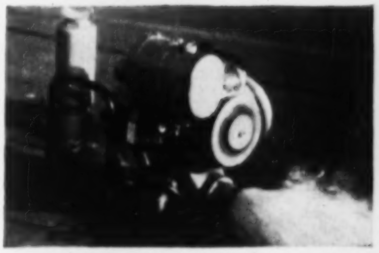
(New Products continued on page 64)



Backhoe Designed for TerraTrac Crawlers

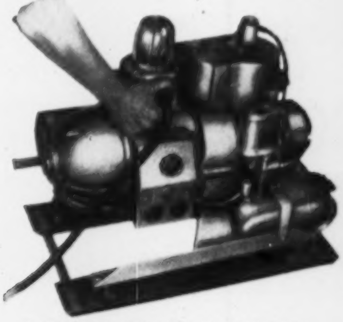
A TerraTrac backhoe designed and built exclusively for heavy-duty use on TerraTrac crawler, is said to incorporate a number of advanced operating and low-maintenance features. It is reported to have a lower selling price than many smaller-capacity wheel-type backhoes. The streamlined boom, featuring a minimum of gadgets and exposed hydraulic plumbing, is fabricated of heavy steel plate and is said to have a lifting capacity of 3,000 lb. It digs 12½ ft deep, has a reach of 18 ft, and a clear dumping height of 13 ft. Bucket rollback of 90 deg, controlled by an extra large hydraulic pump, permits heaped loads without spilling. Buckets from 17 to 24 in. wide are currently available. The boom has a full 180-deg swing with hydraulic foot-pedal control. American Tractor Corp., Churubusco, Ind.

CHOOSE
from a full line of
HOMELITE
Carryable
Construction
Equipment



SELF-PRIMING CENTRIFUGAL AND DIAPHRAGM PUMPS

Sizes: 1½" to 3" — capacities to 15,000 g.p.h. for dewatering and water supply.



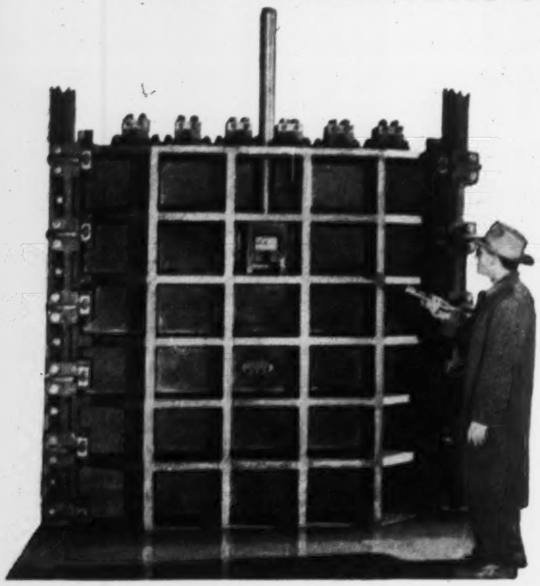
ELECTRIC GENERATOR SETS FOR TOOLS AND LIGHTS

Complete range of sizes and voltages up to 5,000 watts.

LIGHTWEIGHT POWERFUL ONE-MAN CHAIN SAWS

Complete line of saws with clearing and brushcutter attachments for every woodcutting job.

HOMELITE
A DIVISION OF TEXTRON INC
PORT CHESTER, N. Y.



FOR GENERATIONS TO COME!

RODNEY HUNT SLUICE GATES

Controlled cast iron from our own modern foundry . . . heavy bronze wedges . . . generous bronze wedge seats . . . seat facings of malleable extruded bronze, pneumatically impacted and work-hardened in machined dovetail grooves of disc and frame . . . these are typical of the workmanship which gives Rodney Hunt Sluice Gates their unique value and true economy for generations to come!

Specify Rodney Hunt Sluice Gates for standard sizes of 6 x 6 to 120 x 120 inches clear opening, rectangular or round. Over 2000 combinations of standard Rodney Hunt Sluice Gates, including many of unusual dimensions, are available with precision-built hoists.

Write us for the name and address of the Rodney Hunt representative in your area. He'll be glad to give you quotation information and engineering assistance.

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RODNEY HUNT

RODNEY HUNT MACHINE CO.
WATER CONTROL EQUIPMENT DIVISION
85 LAKE STREET
ORANGE, MASSACHUSETTS • U. S. A.

Power Train Package Is Small In Size, Simply Constructed

Compact size, simple trouble-free components, easy installation and long service life are features claimed for the TransVerter, a new power train package developed by Clark Equipment Co.

Rated for engine torque output of up to 325 lb-ft, the TransVerter consists of a torque converter, hydraulic disconnect clutch and standard transmission in one unit ready for mounting with any standard make engine. Because of the unit's compactness—only 8 in. longer than a conventional transmission and clutch—the TransVerter can be installed by the original equipment manufacturer without a major re-design.

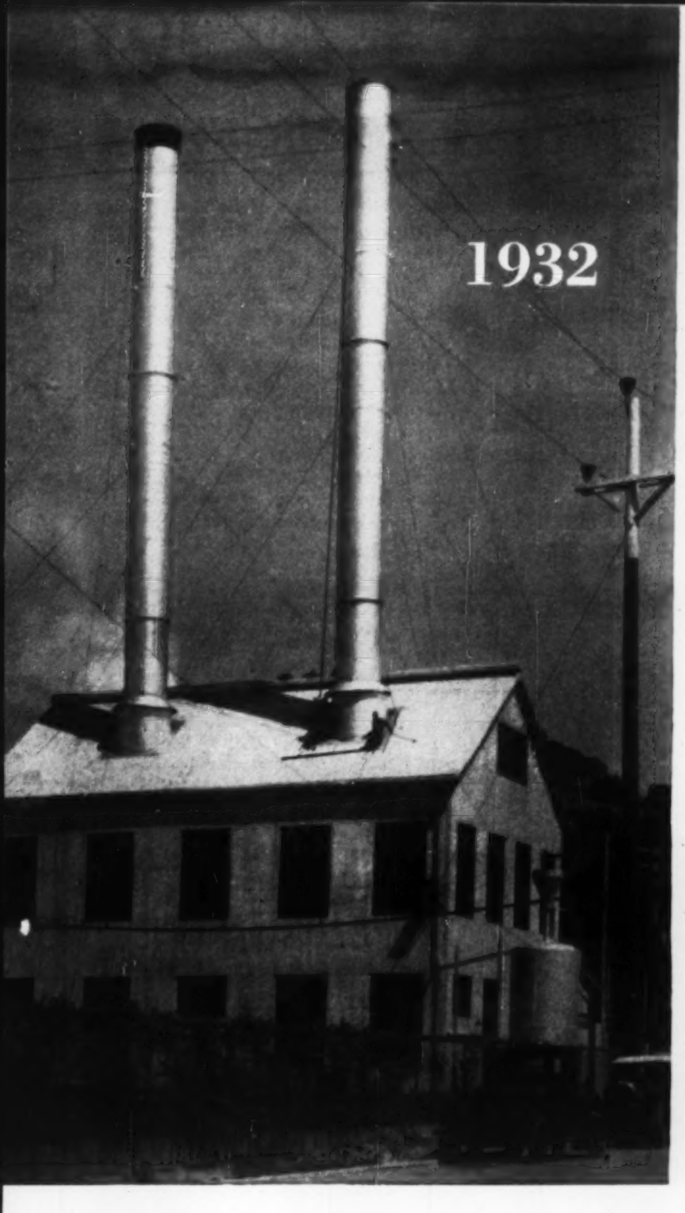
The unit is designed specifically for off-highway and stop-go operations. Operational advantages claimed include elimination of engine stalling and lugging; sharp reduction in gear shifting, and fine inching control by simply working the throttle. CLARK EQUIPMENT CO., TRANSMISSION DIV., JACKSON, MICH.

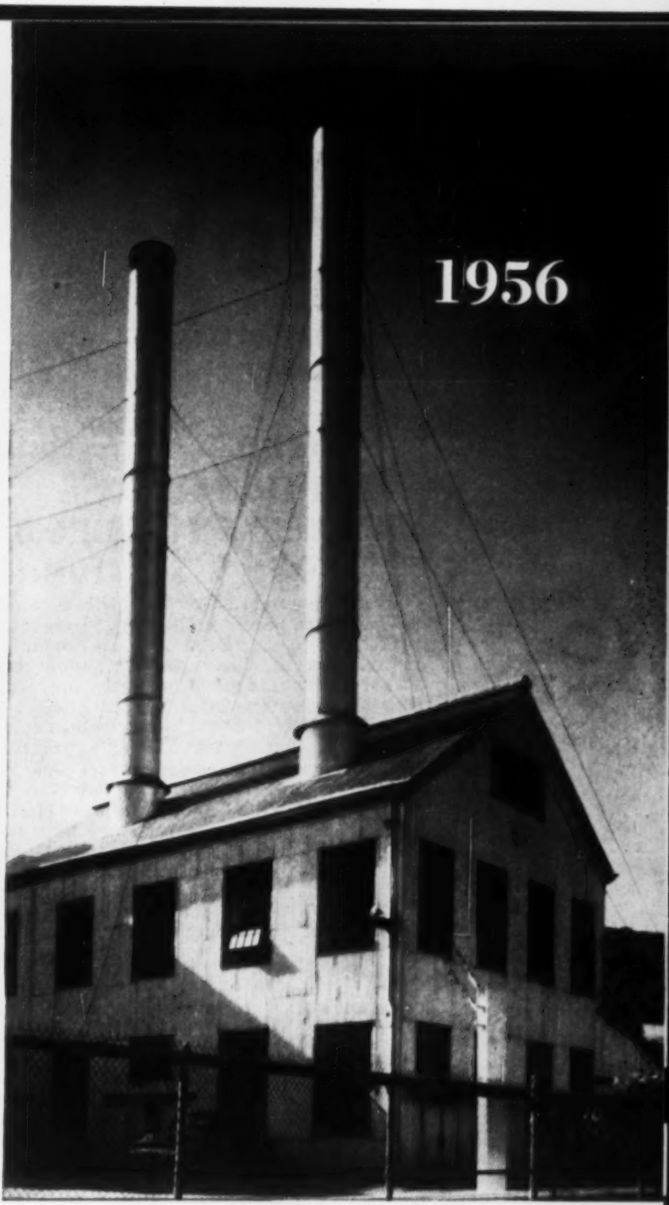
Durable Spray-On Facing Protects Wall Surfaces

A durable facing for wall surfaces called Vitricon, which heretofore was sprayed on concrete, masonry or plaster now is being franchised to concrete-block manufacturers throughout the country for factory glazing. The facing is a cold-glazed cement mixture that becomes an integral part of the block without baking or pressure casting. It is available in a large number of colors, is hard and glossy and resembles mottled tile. According to the U. S. licenser, it is impervious to most chemicals. VITRICON, INC., LONG ISLAND CITY, N. Y.

Offer Optional Power-Drive For Lo-Bin Batcher Unit

C. S. Johnson Company has announced an optional power-drive, with electric motor for all of its Lo-Bin batchers. The power unit, the manufacturer says, can be fitted to any Lo-Bin batcher of 22- or 44-cu-ft capacity, or on a combination cement and aggregate batcher. Standard models of the batchers are equipped for hand-crank operation, conversion of units in the field to power-drive can be done only on late models. C. S. JOHNSON COMPANY, CHAMPAIGN, ILL.





Installed 24 years ago...... still in excellent condition
Here's another Wrought Iron Plate durability story

After twenty-four years of service over boilers, these wrought iron stacks still rate a "no maintenance needed" inspection report.

These stacks, installed at San Rafael, California, Gas Plant of Pacific Gas & Electric Company, tell the kind of story repeated over and over again whenever wrought iron is used. It's a story of economy made possible because of wrought iron's unique defense against flue gas corrosion.

Byers wrought iron plate is an old campaigner in stack service. You'll find documented evidence of its endurance in our bulletin, *Wrought Iron for Flue Gas Conductors and Coal Handling Equipment.* Clear up a lot of questions about stack maintenance. Write us today for this helpful aid . . . it will pay you.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Division Offices in Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. International Division: New York, N.Y.

Available in Canada and throughout the world

BYERS *Wrought Iron Tubular and Hot Rolled Products*

ALSO ELECTRIC FURNACE QUALITY STEEL PRODUCTS

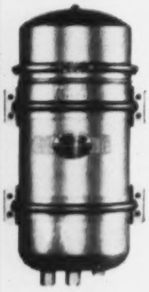
STANDARD OF THE INDUSTRY SINCE 1936

Luber-finer

FOR EVERY TYPE OF ENGINE
EVERY TYPE OF OIL

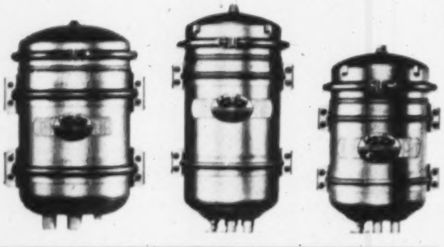
STANDARD
and OPTIONAL
EQUIPMENT ON LEADING DIESEL TRUCKS
TRACTORS & STATIONARY ENGINES

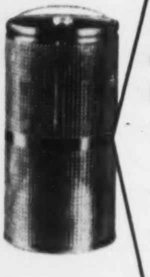
Only a Luber-finer Filter Unit with a genuine Luber-finer Pack produces the patented filtering process that gives engineered protection to engine and oil as recommended by equipment manufacturers. The vital oil supply is circulated through Luber-finer's exclusive specially processed media which removes not only the injurious suspended solids from the oil but also the colloidal impurities which are often more damaging, thus increasing the life of both engine and oil. *The Efficiency of Luber-Finer's Patented Process has never been equalled!*



Luber-finer's patented filtering process adds thousands of miles to engine and oil life—cleaning—filtering—and returning the oil to the engine with the excellent lubricating qualities as specified by the manufacturers of today's modern high powered engines. Every minute—every mile your engine is run it must be protected.

Remember, there's a Luber-finer model especially designed for your type of engine or oil.





DON'T BE MISLED! ONLY GENUINE LUBER-FINER PACKS GIVE EXCLUSIVE ENGINEERED PROTECTION

DIESELPAK — Designed for use with H.D. detergent compounded oils. May also be used with fuel oils and straight mineral oil. Removes impurities and contaminants—without affecting the additives.

REFINING PACK —Designed for use with straight mineral oils, fuel oils, hydraulic oils and inhibited industrial oils.

The Refining Pack, which combines ABsorbent with ADsorbent filtration, removes acids, moisture, suspended particles and colloidal impurities during its effective life more efficiently than any other filter.

WRITE FOR COMPLETE INFORMATION DEPT. 7

LUBER-FINER, INC. 2514 S. Grand Ave., Los Angeles 7, Calif.

Publications

Alcoa Aluminum Handbook, a comprehensive reference handbook on aluminum alloys and mill products succeeds, "Alcoa Aluminum and Its Alloys." The 176-page book contains little text, relies instead on tabulated data—140 tables in all. Following an introductory explanation of the alloy-numbering code, the book deals with wrought alloys, sheet, plate, wire, rods, bars, extrusions, tube, pipe, electrical conductors, structural shapes, forgings and casting alloys. The sections on wrought and casting alloys give mechanical and chemical properties. Those on mill products discuss sizes, properties and tolerances. Write on company letterhead to ALUMINUM COMPANY OF AMERICA, 781 ALCOA BLDG., PITTSBURGH 19, PA.

Storage-tank seals—A new 8-page catalog and data book describes the Hammond Tubeseal system, a patented method of sealing with a liquid-filled tube the joint between the roof and shell of a floating-roof tank. Sectional drawings and photos illustrate the technical principles and features of the system. Additional information is supplied by two pages of questions and answers on design, construction, materials, applications, operation and advantages of Tubeseal. Catalog TS-56, HAMMOND IRON WORKS, 630 FIFTH AVE., NEW YORK 20, N. Y.

Pump Manual – The Contractors' Pump Bureau of the Associated General Contractors has published a new edition of the Contractors' Pump Manual, which has been out of print for several years. Published by the pump manufacturing industry, with cooperation of AGC, the manual is to advise general contractors and others needing drainage or water supply pumps on the characteristics and types of pumps most suitable for different types of construction jobs. THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, MUNSEY BLDG., WASHINGTON 4, D. C.

Aluminum folding partitions—Highlighted in a 7-page brochure is the installation of an automatic aluminum folding partition in an Illinois high school. In addition, features and construction details are given for R-W Aluminum FoldeR-Way Partitions. These partitions are comprised of aluminum-faced panels which have an extruded aluminum frame and a resin-impregnated honeycomb core. RICHARDS-WILCOX MFG. CO., 515 THIRD ST., AURORA, ILL.

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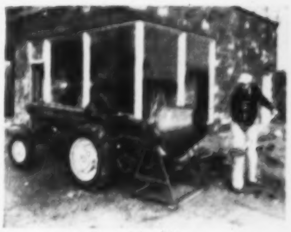

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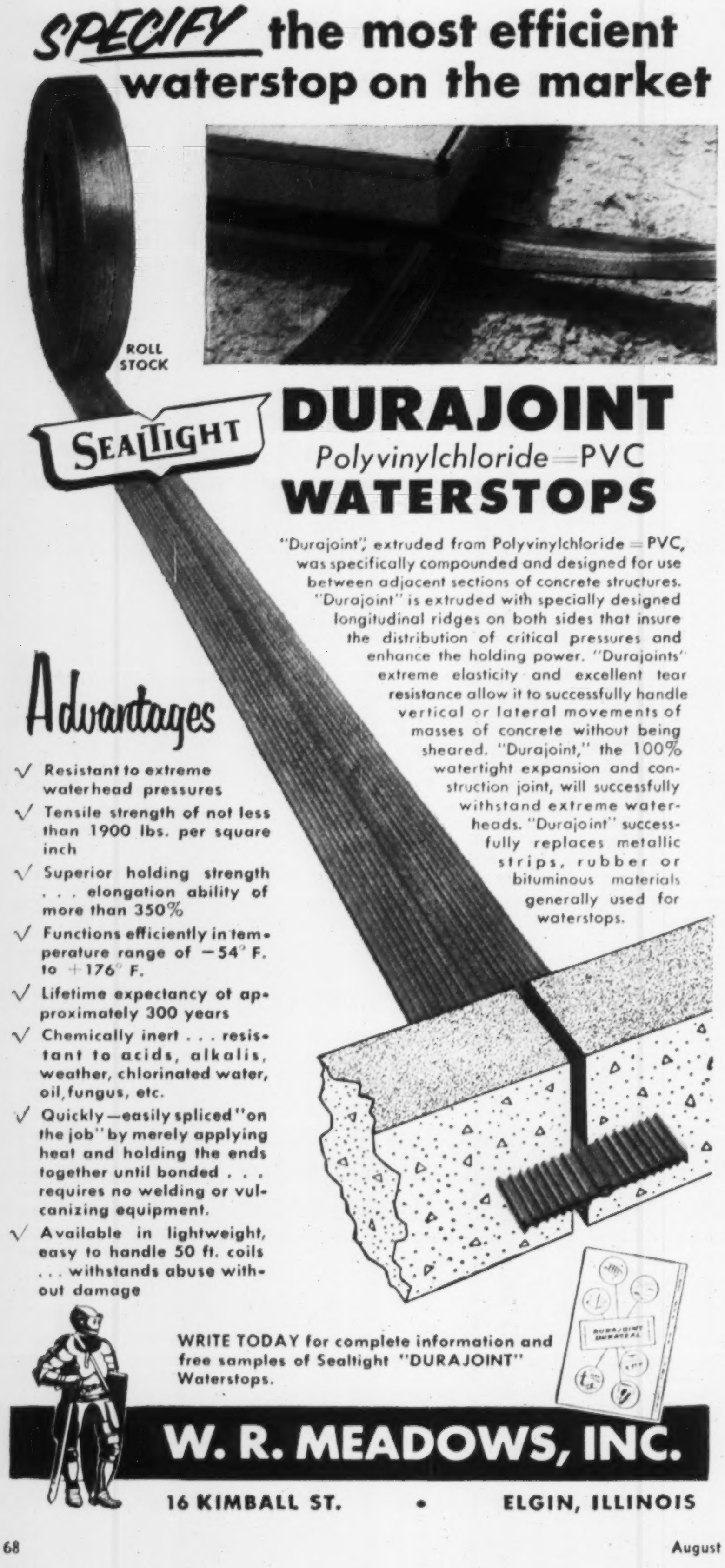

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. . . Publications

Tunnels—A study of twelve major tunneling projects built in the western hemisphere in the last few years, with particular emphasis on excavating and concreting problems encountered and solved, is now available in a 28-page report. Among the projects included are the Bersimis tunnel, the Kemano project, and the extreme water-and-heat conditions encountered at Tecolote, Calif. MASTER BUILDERS CO., 7016 EUCLID AVE., CLEVELAND 3, OHIO.

Selector—A rubber-covered-hydraulic-hose selector is being offered free to users of hydraulic control hose. The revised selector contains latest SAE and industry specifications. Starting with any known factor, a designer or maintenance man can use the selector to determine the proper wiretex rubber-covered hydraulic control hose for his needs. WIRETEX HOSE DEPT., REPUBLIC RUBBER DIV., YOUNGSTOWN, OHIO.

Diesel crawlers—A series of assembly-and-parts photographs are used in a 16-page catalog to illustrate the design, engineering and operating highlights of the 75-hp, HD-11, diesel-powered crawler tractor. The catalog also contains specifications and a spread devoted to the line of equipment matched to the machine. CONSTRUCTION MACHINERY DIV., ALLIS-CHALMERS MFG. CO., MILWAUKEE, WIS.

Highway machines—A 12-page folder describes International Harvester's construction equipment in use on highway building across the U. S. The folder is divided into four parts, representing each section of the U. S. and explains the role that the equipment plays in each section. INTERNATIONAL HARVESTER CO., CONSTRUCTION EQUIPMENT DIV., 180 N. MICHIGAN AVE., CHICAGO 1, ILL.

Motor scraper—Design, engineering, construction and operating features of the new TS-260 motor scraper are contained in a 16-page catalog. In addition to TS-260 specifications, the bulletin includes photographs showing engine, power train, steering, braking and other components of the machine. ALLIS-CHALMERS MFG. CO., MILWAUKEE, WIS.

Glass block—How to daylight school buildings with glass-block and prismatic-glass skylights is described by text, photos and sketches in a 20-page booklet. A number of actual installations are pictured. KIMBLE GLASS CO., TOLEDO 1, OHIO.

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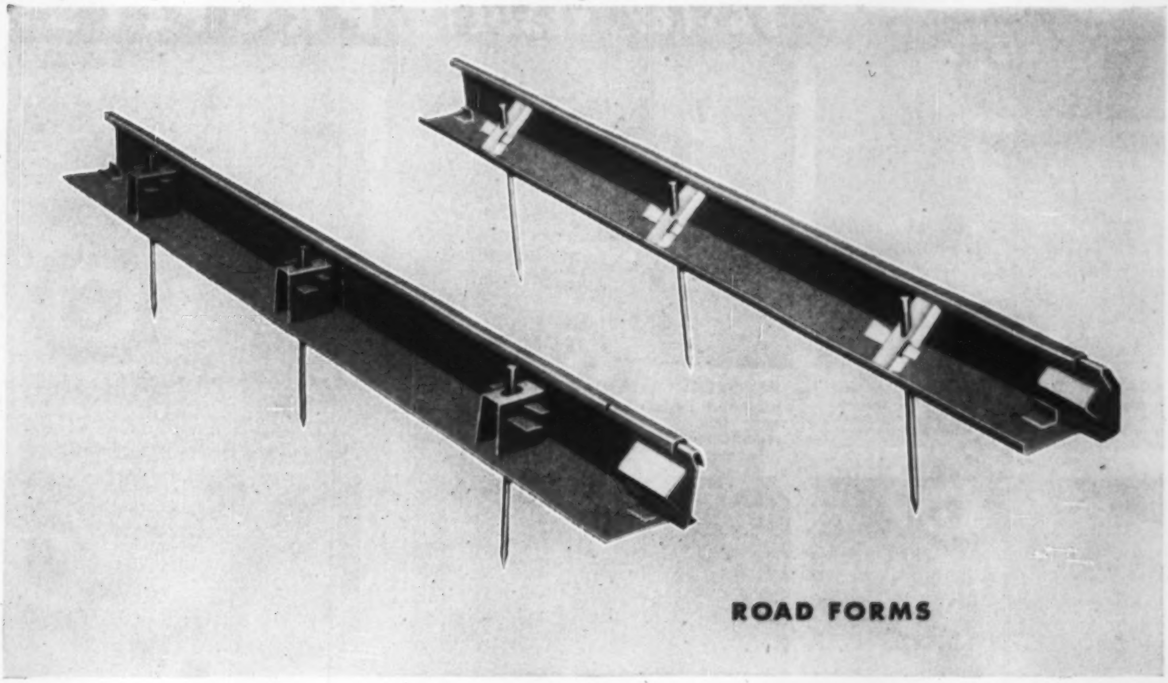

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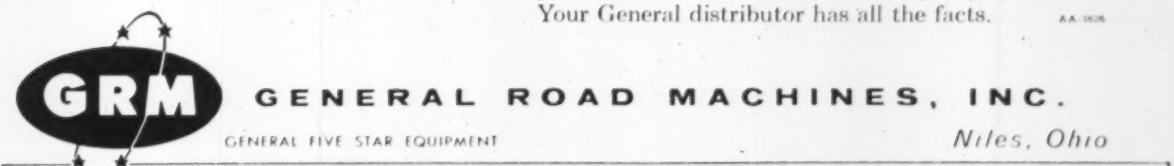
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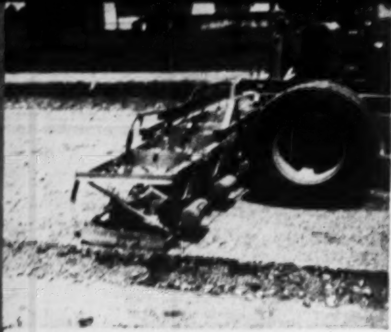

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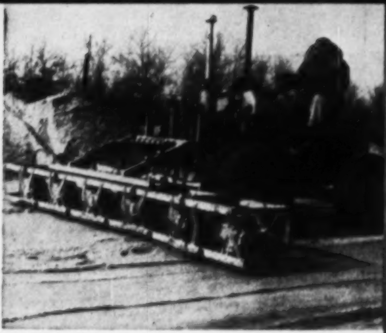

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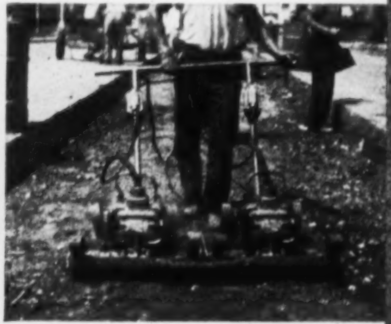
BLACKTOP WIDENING & PATCHING. The same machine operated from power plant on auto-trailer with pickup for Compactor is most efficient means of blacktop pavement patching, paving walks, drives, etc. Will compact up to 2000 sq. ft. per hr. close to maximum density.



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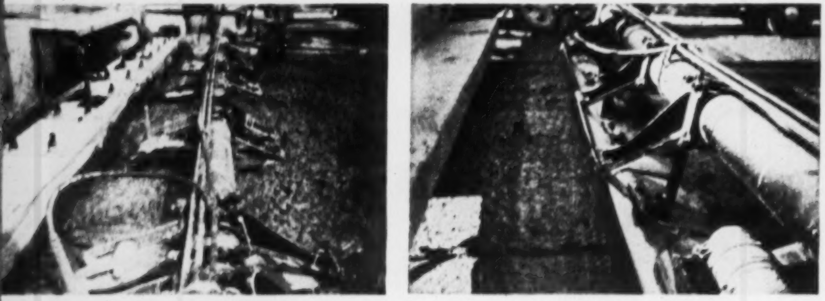

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INTERNAL TYPE; super-powered, gives full width internal vibration through full depth of very thick slabs. Saves time, cement; provides greater density and compressive strength.

SURFACE TYPE; does perfect job of vibrating all mixes in depths used on highway projects. The owner of a JACKSON Paving Tube can quickly switch from internal to external vibration, or vice versa, at minimum expense.

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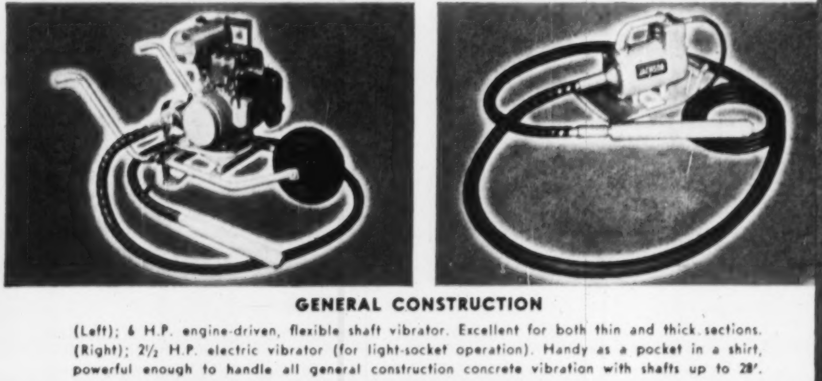
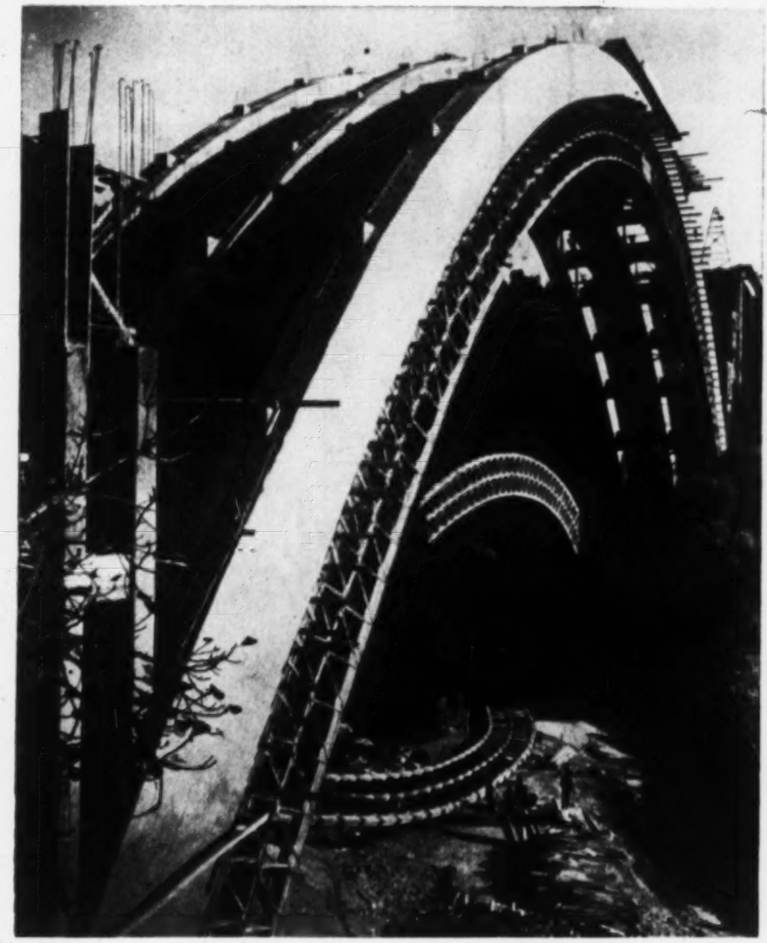


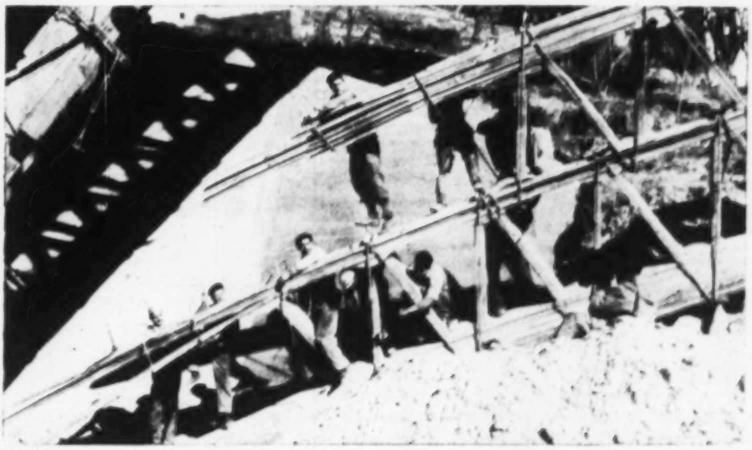
GENERAL CONSTRUCTION

(Left); 6 H.P. engine-driven, flexible shaft vibrator. Excellent for both thin and thick sections. (Right); 2½ H.P. electric vibrator (for light-socket operation). Handy as a pocket in a shirt, powerful enough to handle all general construction concrete vibration with shafts up to 28'.

Wood Falsework for Bridge Spans 331 Ft



CONCRETE ARCH RIBS are on their own as the 331-ft clear-span wood falsework is dismantled at Varazze, Italy. Falsework deflected 2.4 in. during casting operations.



FALSEWORK TRUSSED ARCHES, shown being dismantled after bridge was cast, depend on friction between tightly clamped chord laminations to hold curved shape.

Wood trussed arches with a 331-ft clear span and 98-ft rise served as centering for a concrete arch bridge over the Arzocco River at Varazze, Province of Genoa, Italy.

The contractor built the arches at the site, following a design developed by the Italian firm of Eusebio Cruciani. Basic unit in the Cruciani formwork is a bolt-laminated wood rib. Bundles of planks, with ends of individual planks staggered to provide continuity with other bundles, are bent to the desired shape and clamped with bolts. Bolt heads and nuts bear on short channel sections on top and bottom of the bundles. Frictional resistance between plank faces prevents sliding and thereby holds correct curvature. Spacing and number of bolts is determined by the magnitude of cross-grain compression needed to produce the necessary frictional resistance.

For short span falsework, a row of the laminated ribs may be sufficient. Longer spans can be formed by using the laminated ribs as chords for trussed arches. Cross-grain rib compression in trussed construction is provided by the web system instead of bolts. The webs consist of diagonal wood struts—bearing on beveled wood blocks—and steel U-bolts.

At each strut, two of the U-bolts, joined by turnbuckles, form a closed loop which passes over the top chord, under the bottom chord and along the sides of the strut. This tension loop maintains longitudinal compression in the strut and, therefore, lateral compression in the laminated ribs.

The great length of the Varazze bridge necessitated the use of two-tiered centering arches. In addition to top and bottom chords, a third laminated rib served as a middle chord, with webs framing into it from above and below.

The contractor fabricated the centering arches in half-span segments on the ground—but with only two ribs and one tier of web members. He erected and braced them and then used the erected structure as staging for assembly and erection of the upper tier of webs and the top chords.

The Varazze project required six centering arches, two for each of the three concrete ribs. The falsework structure contained upwards of 80,000 fbm of lumber and supported 1,575 cu yds of concrete.

LUDINGTON, MICHIGAN

(Right); 2½ H.P. electric vibrator (for light-socket operation). Handy as a pocket in a shirt, powerful enough to handle all general construction concrete vibration with shafts up to 28'.

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The late Albert Loecher who executed above rendering of U.S. Veterans Hospital, Wilkes-Barre, Pa. Kelly & Gruzen, Arch's.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H—$1.50 per dozen—less in quantity. The 1001 Mars-Technico push-button lead holder—$1.50 each—less in quantity. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H—$1.20 per dozen—less in quantity.

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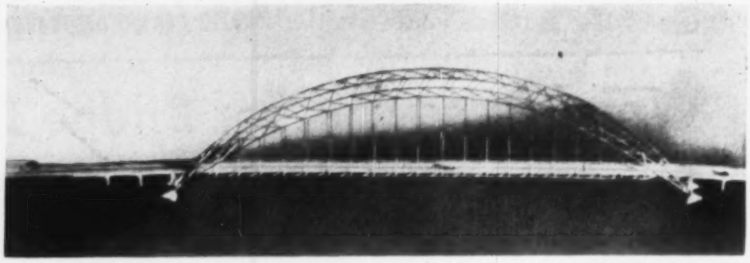
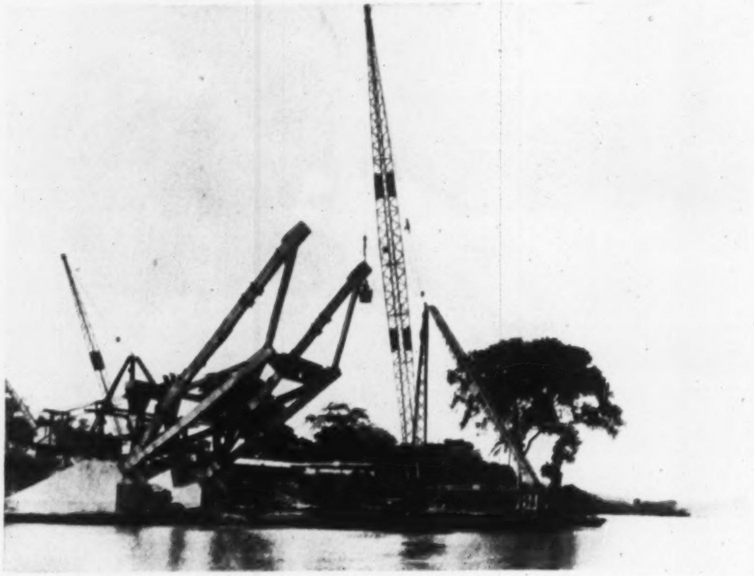


STEEL ARCH BRIDGE (model shown), with 805-ft span is being erected over the heretofore unspanned Volta River, in Britain's Gold Coast colony in Africa.



FIRST ARCH SEGMENT, like those that followed, was prefabricated in Great Britain. Segments were bolted together on the job. 1,000 tons of steel went into the bridge.

Gold Coast River Gets First Bridge

The first bridge across the Volta River, in Britain's Gold Coast colony, is now shaping up for November completion. The $2-million project, located at Adomi, 70 miles from the river mouth, is part of a Gold Coast government program to improve communications with neighboring Togoland, a United Nations trusteeship.

The main span is an 805-ft steel arch, buttressed on opposite banks and clearing the water by 200 ft at midstream. The deck structure is suspended from the arches. At each end of the over-water link, three 50-ft reinforced-concrete spans raise the approach roadways 30 ft above the banks to forestall flood damage. River depth at the site is 100 ft.

The steel was fabricated in Great Britain and welded into five-ton arch segments before shipment. Assembly is being completed at the job by bolting the segments together. The bridge contains more than 1,000 tons of steel. Contractor on the job is Dorman, Long & Co., Ltd.

Argentina Plans Tunnel To Isolated Provinces

Argentine President Pedro E. Aramburu has laid the cornerstone for a proposed tunnel under the Parana River that would join the capital cities of the provinces of Entre Rios and Santa Fe.

It is interesting to note that the ceremony took place well before any contract for building the tunnel itself had been advertised or entered into.

As planned, however, the tunnel would bring Argentina's rich provinces of Entre Rios, Corrientes and Misiones out of isolation imposed by the Parana and Uruguay rivers, which cut them off from the rest of the country and from neighboring Uruguay, Paraguay and

. . . International

Brazil. The project, though, exists only as a preliminary plan by the Engineering Department of the municipality of Santa Fe, and has been the subject of criticism which holds that improved ferry-boat service suffice.

Meanwhile, the proposal is being studied by a special commission of the National Ministry of Public Works which is hoping to call for bids from "specialized firms of the world who could do the job."

Initial plans call for a tunnel 2,600 meters (8,500 ft) long, cost to be defrayed by tolls. Total cost is expected to be about $20 million.

Denmark Plans New Ports For Improved Ferry Service

While Danish engineers and economists debate the advisability of a bridge across the "Great Belt" a 10-mi strip of water separating the two largest islands of the island country, the national government is proceeding with construction of two new ports for ferry boats.

A problem is that the present ferry service, which runs between the towns of Korsor and Nyborg have reached the limit of expansion for shipping facilities, while vehicular and rail traffic has been increasing steadily. Under present plans, new ferry terminals are now being built at Halskov, and Knudshoved.

The plan advanced by the government is that automobile traffic would be diverted to the two new ports, while rail traffic and commercial trucks could be continued to be handled at the older ports.

The new work involves considerable dredging and construction of the ferry berths themselves.

International Air Terminal for Downtown London Planned

A $14-million plan for construction of an international air terminal and airline headquarters straddling railway lines at Victoria Station in London has been submitted to the Southern Region of British Railways.

As proposed, the project would cover about eight acres and comprise reception and processing facilities for passengers and merchandisers, ticket offices and shops. Office accommodations would also be provided. An official statement accompanying the announcement of the plan said that there will also be provision for a 2,000-car, multi-floor garage with mechanical parking equipment and there will be room for a helicopter landing platform on the roof.

Hunting Park—Ridge Ave. Underpass, Philadelphia, Pa.
Architect—State Highway Dept., Commonwealth of Pa.
Contractor—McNichol Paving and Construction Co.
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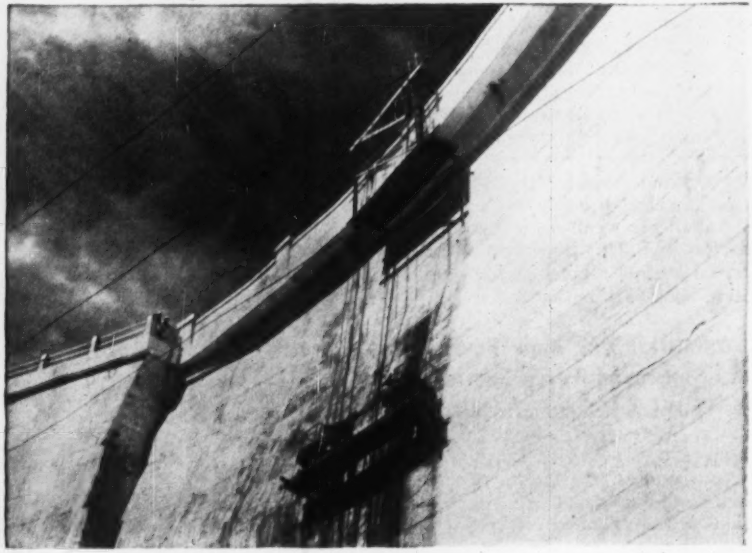
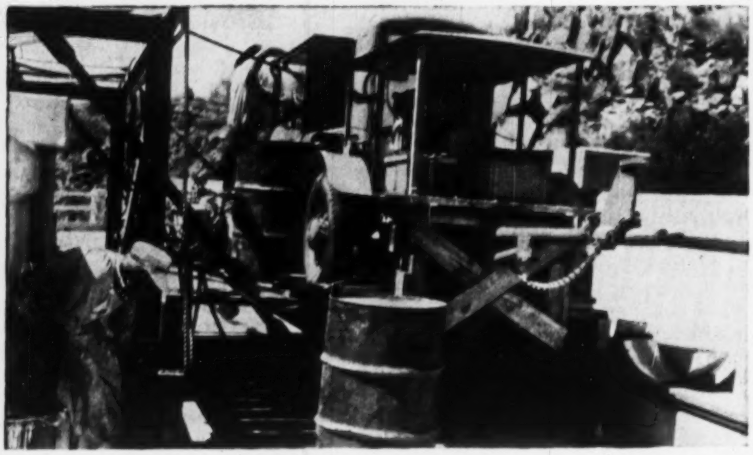


Dam Gets New Face . . .



. . . With Easier, Novel Rig

A tailor-made rig is making life much easier for the painting crew on Stewart Mountain Dam near Phoenix, Arizona. Designed by civil engineering supervisor Clarence Whalin to minimize hazards and boost efficiency, the rig consists of two parts—an upper frame which travels along the dam's 1,100-ft crest and a suspended scaffold.

Vertical control of the 14 x 3-ft aluminum scaffold is achieved by electrically-operated hoist and a pair of $\frac{3}{4}$-hp motors, mounted at either end of the scaffold. Similar to window-washing on skyscrapers, the painters work a 14-ft swath, first washing the dam's face from top to bottom with an air-water jet at 90 psi. The paint, a vinyl base type, is then applied with spray pressure varying from 40 psi at the top of the 119-ft high dam to 20 psi at the base. Compressor, located on the upper frame, serves as counterbalance.

About 550 gal of paint, enough for the face lifting, was applied in three weeks' time. The painting operation, last done at Stewart in 1949, aims to reduce heat absorption and thus hold down temperatures within the mass structure. Abutments and powerhouse are not part of the face-lifting.

(F&O continued on page 76)

LIMA

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Cranes—Crawler mounted, Truck mounted—Wagon mounted. Baldwin-Lima-Hamilton builds them all and in sizes that will best meet your requirements. When mounted on rubber they are available in capacities up to 50 tons. They will go anywhere you care to drive a truck and at speeds up to 25 m.p.h. For work where mobility is not an important factor, LIMA crawler mounted cranes can be furnished in capacities up to 110 tons.

To increase their range of usefulness a variety of attachments are available—shovel, dragline, clamshell, pullshovel and pile driver. Each attachment is interchangeable. For fast, more efficient crane service buy the crane that is first in quality—first in safety and reliability—BUY LIMA.

CRAWLER TYPE

- available in capacity up to 110 tons
- travel speed up to 1 m.p.h.
- all major operations air controlled except types 34 and 44
- independent boom hoist
- long-wide crawlers for greater stability

TRUCK TYPE

- mounted on LIMA 10 wheel truck carrier
- powered by two engines (one in carrier, one in rotating frame)
- travel speed, 25 m.p.h.
- types 24, 34, 44, 54 and 703 available with truck mounting

WAGON TYPE

- types 24, 34, 44, 54 and 604 available with wagon mounting
- one engine powers all operations including travel
- one operator controls all operations from cab
- rotating assemblies have same basic features as corresponding crawler type machines.

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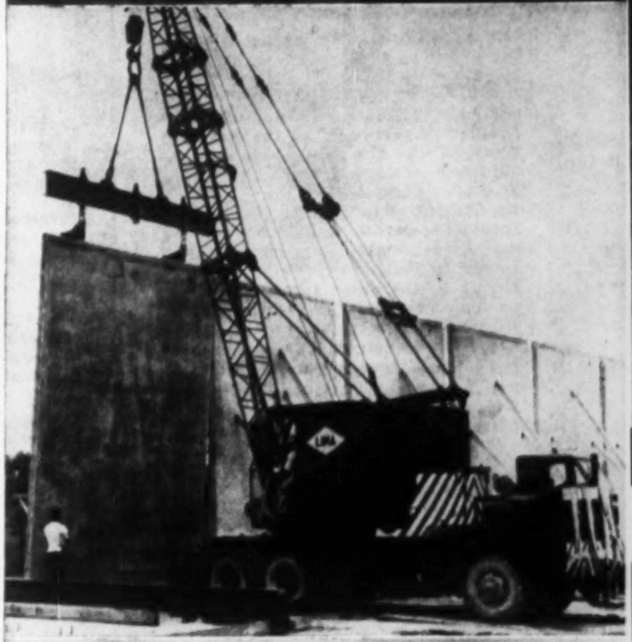
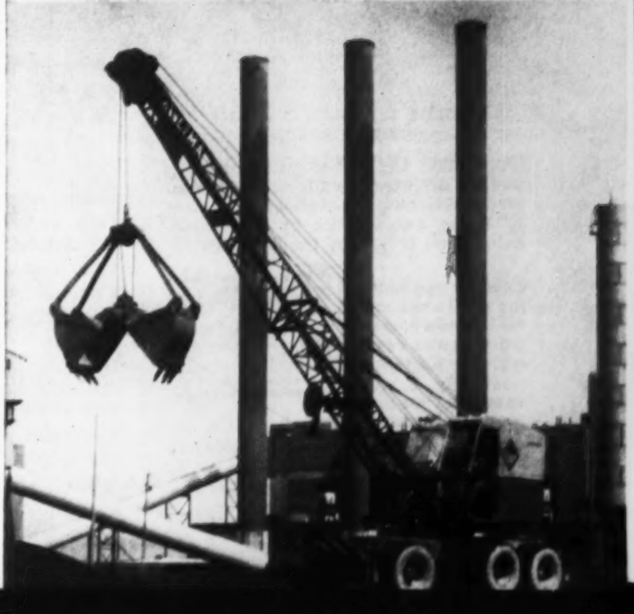


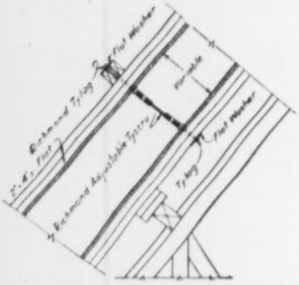


Concreting Achievement

Non-parallel forms supported by Richmond Adjustable Tyscrus

To pour the continuously curved shell of the unique MIT auditorium—it thickens from 3½" at the center to over 10" at the supports—George A. Fuller Company built an inner form on elaborate scaffolding. On the lower 25 feet of the shell, the outer forms were supported on the inner ones by Richmond Adjustable Tyscrus.

The Adjustable Tyscrus were assembled by threading a pair of standard Richmond Tyscrus — resistance welded for heavy work—on the ends of a Continuous Threaded Lagstud.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Flat Washer
Tylag

GEORGE A. FULLER COMPANY
FORM DETAIL

These kept the non-parallel forms in perfect alignment while the pour was made. Assembly as well as stripping of forms was speeded by the coarse, helical-coil thread of the Tyscrus.

Send for new Richmond Handbook which tells how to pour concrete quickly and economically. It will save you time and money on your next job. Write to: RICHMOND SCREW ANCHOR COMPANY, INC., 816 Liberty Avenue, Brooklyn 8, N. Y. or 315 So. 4th St., St. Joseph, Mo.

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... AND BE SURE IT'S RICHMOND!
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SCREW ANCHOR CO. INC.

New Mist Method Smokes Out Illegal Sanitary Sewer Traps

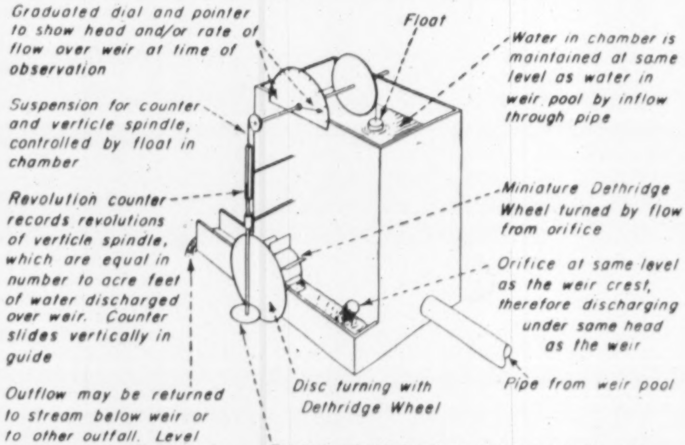
A new method, employing an oil mist, has been devised to smoke out illegal connections to sanitary sewers—and it works. That's the report from Versailles, Ohio, where the mist method has been tried and found safe, economical and fast.

• **Here's How**—The section of sewer to be checked is flushed with compressed air to remove gases and odors. The section is then made a closed system by inserting plugs between the adjacent manholes. At one of the manholes, the plug is fitted with a hollow tube, extending up to the ground surface. Here are located a fog nozzle linked to oil and air lines, a compressor and an oil reservoir.

The spray nozzle is adjusted and held loosely in the hollow tube, to avoid excessive build-up of pressure which would break the water seal in properly trapped connections. Within five minutes after its introduction into the sewer, the mist can be seen escaping from taps not properly trapped.

The base oil employed at Versailles, a village of 2,000, was a deodorant type; disinfectants and insecticides can be added to the oil. Sewers from 8 to 15-in. dia have been tested successfully by the new method, developed by H. R. Rich of Knox Chemical Co., Chicago, E. R. Baumann of the University of Illinois, and K. W. Cosens of Ohio State University.

'BYHAM' RECORDER
Automatically records total quantity of water discharged over a rectangular weir


Graduated dial and pointer to show head and/or rate of flow over weir at time of observation
Float
Water in chamber is maintained at same level as water in weir pool by inflow through pipe
Suspension for counter and verticle spindle, controlled by float in chamber
Revolution counter records revolutions of verticle spindle, which are equal in number to acre feet of water discharged over weir. Counter slides vertically in guide
Miniature Dethridge Wheel turned by flow from orifice
Orifice at same level as the weir crest, therefore discharging under same head as the weir
Outflow may be returned to stream below weir or to other outfall. Level of water at outfall needs to be at least 6 inches below level of weir crest
Disc turning with Dethridge Wheel
Pipe from weir pool
Friction wheel fixed on vertical spindle and turned by rotation of disc. Vertical position of friction wheel is controlled, through float and pulleys, by the head on the weir. Distance of friction wheel from centre of disc is proportional to the head on the weir

Water Drives Flow Recorder

An ingenious recorder of water flows over rectangular fixed-crest weirs, requiring no clockwork mechanisms, has been developed by H. F. Byham of the State Rivers and Water Supply Commission of Victoria, Australia. Principle and operation are explained in the diagram above.

Tests showed that if the weir and the orifice in the recorder are both discharging under the same head, the rate of flow over the weir at any time is proportional to the first power of the head times the flow through the orifice. Discharge through the orifice is represented by the rate of revolution of the axle rotated by the Dethridge wheel. This axle is "geared" to the vertical axle turning the counter in a ratio always proportional to the head by means of the float in the chamber. Thus, revolution of the counter axle is proportional to the rate of flow over the weir.

Because no electric power or rewinding of clockwork mechanisms are required, the Australians feel their new recorder should be capable of operating without attention for very long periods.

Even on narrow roads, the Barber-Greene Windrow Loader is easy to maneuver . . . needs only an 8'6" turning radius. Here the 550 is working in Henry County, Ky.

County road official, Paul Stivers, says:

"Our Barber-Greene has cut costs on all our windrow loading jobs"

Picking up windrowed material has long been one of the most costly material handling operations. The Barber-Greene Model 550 brings a new low-cost answer to this problem. Mr. Stiver reports, "Our Barber-Greene handles an average windrow 3 feet wide and 20 inches high . . . fills a standard 2-ton truck in less than 90 seconds.

"Our 550 is easy to handle in tight quarters and has the productive capacity to keep all our trucks busy all the time. We readily recommend it to others doing similar work."

These are a few reasons why the Barber-Greene Windrow Loader is building a fine reputation in a hurry. This loader was designed for the average size job. Where larger, more expensive loaders require special fleets of trucks, this compact loader has a realistic capacity that keeps ahead of trucks normally available, and cuts the high cost of windrow loading.

High travel speed, exceptional maneuverability and simple operation provide a loading efficiency unobtainable in the past. Yet the cost of the Barber-Greene Windrow Loader is about ½ the cost of similar machines.

Here's the low-cost answer to normally truck-bottlenecked operations. New claw feeder principle permits loading at 4 cu. yd. per min. Easily converts to a leafloader or to handle snow at 7 cu. yd. per min.

56-17 WL

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Good Ventilation

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Patient comfort always is a consideration in the building of a hospital. But when architect Leo A. Daly designed the Bishop Clarkson Memorial Hospital, Omaha, Nebraska, *special emphasis* was given that factor. Hal G. Perrin, administrator, and Robert H. Storz, chairman of the building committee, consulted with architect Daly . . . patients were queried . . . all agreed that noise, daylighting and ventilation should come in for critical study. The soundproof characteristics of Ceco-Meyer Concrete Joist Construction and the daylighting and ventilating advantages of Ceco Windows met the requirements. Architect Daly made this further comment on the building method: "This construction is light in weight, but affords exceptional stiffness because of additional depth provided by the monolithic floor and joist section."

Bishop Clarkson Memorial Hospital, selected as the "Hospital of the Year."
Leo A. Daly Co., Architects and Engineers. Peter Kiewit Sons' Co., Contractors.

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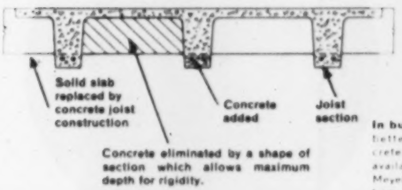
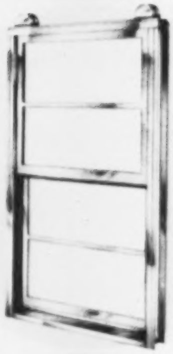
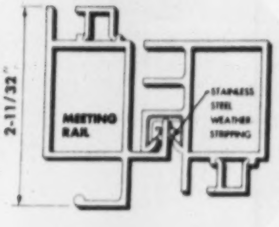
Joist section superimposed on solid slab of equal live load capacity


Solid slab replaced by concrete joist construction
Concrete added
Joist section
Concrete eliminated by a shape of section which allows maximum depth for rigidity.

In buildings, there's nothing better than reinforced concrete . . . rugged, firesafe and available now. In floors, Ceco-Meyer Concrete Joist Construction brings you those advantages . . . with savings of 10% to 30% in concrete and steel.

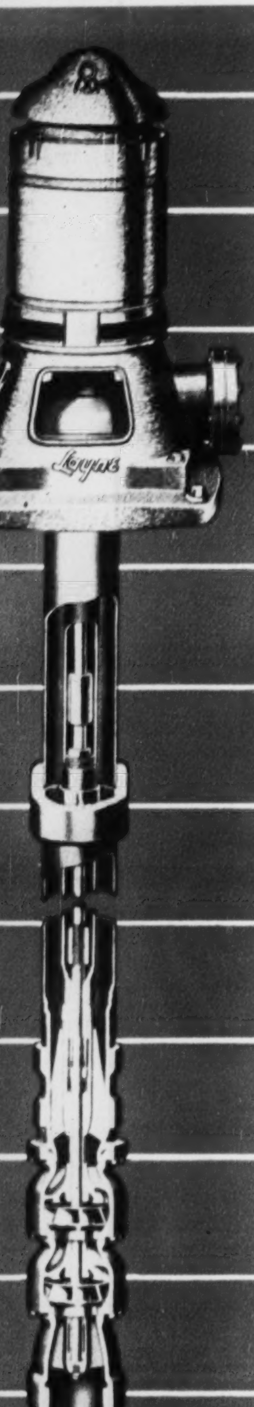


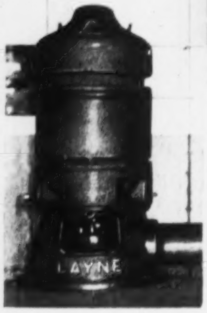
Ceco-Sterling Series 200-B Window — Ceco Sterling Double Hung Windows assure minimum air infiltration. Sash float on stainless steel weatherstripping, providing tight but easy operating, silent windows.


2-11/32"
MEETING RAIL
STAINLESS STEEL WEATHER STRIPPING

Meeting Rail Section, Series 200-B Window — Heavy extruded box sections assure rugged performance . . . double contact stainless steel weatherstripping provides tightness. Weatherstrip at jambs gives a spring cushion sliding contact.

Concrete visors for shading and window washing are dramatized in this view. Shaded windows are Ceco-Sterling Double-Hung Aluminum Windows and Picture Windows.





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Research

Mine-Acid-Inhibitor

USPHS moves to clear-up legal cloud, push research

The promising mine-acid-inhibitor process developed by Johns Hopkins University researchers four years ago once again has dropped back under the legal cloud that has shrouded most of its turbulent career.

That career was launched in January 1953, when Walter A. Patrick, a physical chemistry professor, and Floyd W. McCollum, a chemical engineering student, announced that a chemical inhibitor might prevent natural formation of acid in active and abandoned coal mines. The inhibitors—such as chromates or phosphates—would prevent sulphur-containing iron pyrites that line exposed walls in mines from corroding and thence forming acids.

Their application for a patent on this finding immediately ran into a legal snarl. The U. S. Public Health Service held that any discovery made with support of public funds must be dedicated to public use. A USPHS grant to the Potomac River Basin Commission had financed McCollum's tests of Patrick's mine-acid-inhibitor theory.

It took more than two years to reach a settlement, clearing the path for the Patrick-McCollum patent application. It was widely assumed that the storm had subsided and a patent would be forthcoming in due course.

But, last month the patent office upset these hopes by rejecting the patent application for lack of sufficient scientific evidence to judge the merit of the process. This ironic outcome of the protracted squabble over patent rights has left the future of the mine-acid inhibitor up in the air.

All three parties involved are considering steps to lift the uncertainty. McCollum has turned over to the Potomac River Commission the data on field tests he conducted on the process—data insufficient to satisfy the patent office. The commission, in turn, has relinquished its claim of future patent rights to PHS and has forwarded all data on the process to it.

The next step is up to PHS. So far, it is undecided on how to proceed, but is weighing this plan: Transmit the process details and all test data to its Taft Engineering Research Center at Cincinnati for expert appraisal and guidance on whether PHS should put up the money for further field tests.

Pending the experts' report, Washington's view is that the Patrick-McCollum process is a promising lead—the only one to turn up so far—to lick mine-acid wastes.

Future patent moves are likely to be guided by PHS decision on whether or not to run extensive tests on the process. If the test program does come off—and the results are favorable—PHS probably will apply for a patent in its own name. In the event PHS drops the idea of further testing—for lack of funds or an adverse report from its Cincinnati engineers—it probably will publish all process details and McCollum's field report.

Solar Heating

Nine-room house going up in Denver to test system

A solar-heated house is being constructed in Denver for George O. G. Lof, consulting engineer. Lof believes the sun shining on heat collector panels on the flat roof will supply 60% to 75% of the total heating energy.

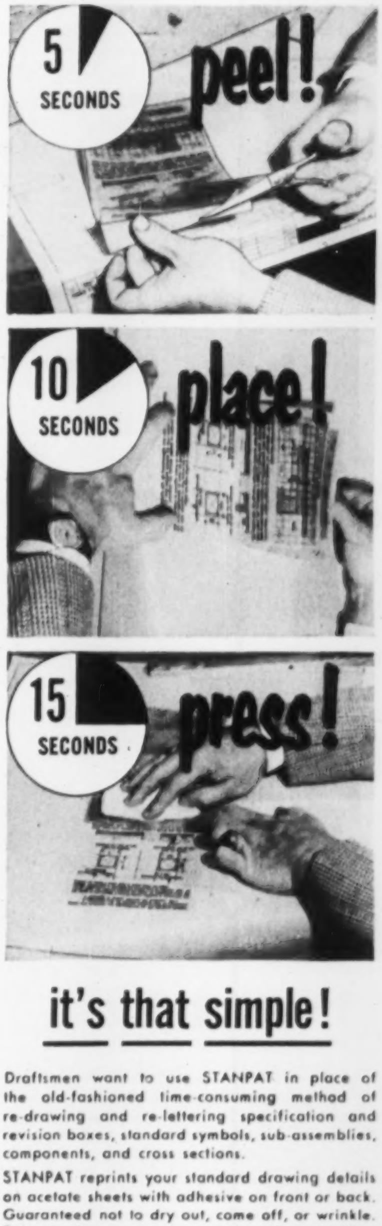
The nine-room house will test a heating system developed by Lof and American Window Glass Co., Pittsburgh. The firm is supplying the rooftop heating panels at a cost of more than $2,000.

Two heat collector units will be arranged in heavy aluminum frames which are tilted to the south at a 50-deg angle. Each unit will contain sixteen 6x3-ft sections. In each section will be overlapping plates of glass, arranged like shingles. One-third of the area of each plate will be blackened to absorb sunlight and convert it into heat. The other two-thirds of the surface will be clear, treated glass from which only 10% of the sunlight will be lost by reflection.

A blower in the basement will circulate air at the rate of 1,000 cfm between the glass plates in the collector. The air, heated to 200 F, then will be blown through two hollow columns, 18 ft high and 3 ft in diameter, filled with loose 2-in.-dia rocks, where the heat will be stored.

When no room heating is needed in the summer, the system will do most of the domestic water heating.

A natural gas heating plant of conventional design will be built into the solar-heating system for supplementary use in coldest weather.



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Tully & DiNapoli . . . . .

How to Get Big on Small Jobs

In this day in the contracting business, there's nothing particularly remarkable about a firm with a contract for $4.5 million on its current books. But there's something quite remarkable about a firm with an average yearly gross of $15 million whose current contracts range downward from that $4.5 million to one for $3,000—a firm, in fact that makes a business of many and varied small contracts.

Around metropolitan New York, that description fits one firm in particular—Tully & DiNapoli, Inc., whose green-painted construction trailers, trucks and equipment are likely to be seen anywhere from a minor street excavation to probably the largest earthfill anywhere in New York, from landscaping a tiny roadside park to a major superhighway construction.

How do you keep a business running on such a multiplicity of jobs—a business that owns a great deal of equipment, a fine office, employs several hundred people? You can boil the whole thing down to these principles:

1. Stay in your own back-yard—keep your operations within an area where you can supervise it closely.
2. Diversify your operations—both in the kind of contracts you take and the business connections you make.
3. Don't ever get in the position of working for your machinery.
4. Keep your eye on your estimate of what the job should cost and do better.

• **Partners**—There could be a fifth point: Get yourself a good partner.

Edward A. Tully and Vincent P. DiNapoli are lifelong friends, who were born and grew up together in Astoria, Queens, in the shadow of the huge Astoria plant of the Consolidated Edison Co. (then the Astoria Light, Heat & Power Co.).

By 1921, Tully, the older (by three years) had managed to acquire one truck—and Pete DiNapoli was his driver and partner. And in that year they started in business—with a contract to haul away—for free—the ashes from the big power plant.

"You got to be lucky too," says DiNapoli. "We were, that first year. It was a bad winter, and the company—which had been paying contractors to haul away the ashes, thought we were crazy, and were afraid that we wouldn't perform on our agreement, since with a bad winter we couldn't sell the ashes for roadbuilding. But we kept hauling them out and kept

Tully . . .

. . . we don't question each others judgment.

the bunkers clean—and in the spring we sold our ashes and made $1,400. We were in business."

They incorporated themselves in 1924—and that's the only formal agreement that has ever existed between the partners. Today, after 35 years of corporate association, their two huge desks face each other in an air-conditioned office on Flushing Meadows—about eight miles from Astoria, and they thrash out every detail of their business, face-to-face, every day.

Although members of their numerous families (DiNapoli is the eldest of seven brothers, Tully the father of five sons and two daughters) are closely associated in the business, the two partners still control all of the stock between them. Their partnership goes into any and all joint ventures in which they participate: If T&D has half of a joint venture, each partner personally takes 50% of the firm's share. In the various sidelines in which T&D is engaged (an asphalt plant, a prestressed concrete manufacturing plant, several small specialty contracting organizations), in considerable real-estate holdings, the same partnership arrangement holds true.

"We don't argue, and we don't question each others' judgment," is Tully's word (officially, he's president, DiNapoli secretary-treasurer). "Either of us can commit the firm—and it's OK with the other," adds DiNapoli.

• Stay home—In its 35 years of existence, the firm has never worked outside metropolitan New York, and isn't much interested in doing so.

"Home" is the five boroughs of Manhattan and surrounding nearby counties in Long Island, Westchester and New Jersey.

The reason: Close supervision.

All the jobs are within easy car or subway reach of the Flushing Meadows home office—and all T&D office personnel, which includes the partners, visit jobs on their way to work, on their way to lunch, on their way home. That's in addition to regular job inspections and supervision.

Very personally involved in every phase of the business—and literally acquainted with New York from the group up—the firm's leaders are on hand whenever a problem comes up, know their men—down to laborers—intimately, know their machinery and their methods inside out.

"Most important," comments DiNapoli, "is feel. You get to know the job—you can feel it if its going right or not, you can see how the men are working, how the housekeeping is going, what materials and equipment are on hand. You take that feel, and add it to what your accountants tell you—and you know whether the contract is a good one."

• Labor relations—There's a corollary in this personal supervision—labor relations and personnel.

On labor relations, the two partners have a great advantage in that, while they were growing big in the contracting business, most of the present-day leaders of construction labor in the metropolitan area were also growing into their jobs.

The two sides know each other intimately—and know each others' problems. Both Tully and DiNapoli have done their share of hard hand labor—"we were first into the ditch and last out, every day, for years" they'll tell you—and either of them can run almost any kind of equipment on the job. They and their supervisors and foremen very well know the conditions under which their men must work, know how they live and play—and know what demands and conditions are justified.

• Personnel—On personnel, of course, no one and nothing escapes the bosses' eyes.

They have some long-standing principles on this matter—one of the oldest is that they like to "grow their own" in the way of superintendents and foremen.

Listen to DiNapoli:

"A couple of things we don't do are very important. We never correct or bawl out a supervisor before his men; we never change anything by our own order while we're on the job. If a bawling-out is needed, that's done in private. If there's anything needs changing, it's done by order of the job boss, not Ed or I.

"We seldom argue with the super or the foreman over the way he's doing the job. He wouldn't be a super if we didn't think he knew his business—and more often than not a man will do a thing better his own way—just to prove he's right—than he would by direction from us."

The firm "grows its own" by watching the men, and giving them opportunity. One reason for some of the small jobs is that it gives a chance for a man coming up to have some authority, on a job small enough that he can be watched carefully, yet that will test his mettle.

The policy works. William M. Sheehan—who with Thomas G. Guerin is one of the firm's two project engineers—came with the outfit 20 years ago, as engineering senior, to do a laborer's job. Three or four of the men now with the company have been there for 30 years, there are others with 25, 24, 20 years of service.

Interestingly enough, everyone (except the partners) gets a straight salary—from the job superintendents down. No one works on a percentage basis—if there are any bonuses to be given, they're distributed at Christmastime, and have no direct relation to any specific job.

"A man with a job to run—whose business it is to bring it in under the estimate if he can—can do that job better without worrying about whether we're charging too much to the job, and thus cutting in on his take," say the partners.

• Many angles—The word diversification applies to almost all of the T&D's operations, from the type of contracts it takes to the many side ventures into allied construction fields that it has entered.

The contracts range from a tiny storm drainage job for the Town of Hempstead in nearby Nassau County, Long Island (that $3,000 job) to a $4.5 million job for the state of New York on the proposed Long Island Thruway—a job involving a 700,000 cu yd earthfill across a swamp that will one day be a city park. In between, at $70,000, $150,000, $1.5 million are street repair and wiring jobs for Consolidated Edison, a major road job for the Port of New York Authority at Idlewild airport; landscaping for a Nassau County park.

As to side venture, the firm has just established an asphalt plant (Columbia Asphalt Co.) across Flushing Creek from its main yards; holds an interest in PreCrete Inc.—maker of prestressed concrete units for buildings— and two other associated companies that make precast concrete units for sewers and electric utilities; has a joint venture with two small electrical contracting organizations; an

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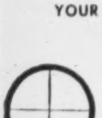

Fig. I Cross hair arrangement for our standard levels.

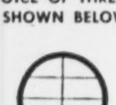

Fig. II Stadia hair arrangement for our standard transits.

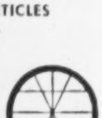

Fig. III Special stadia hair arrangement, furnished upon request.

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interest in several small specialized trucking outfits, has a separate topsoil and cinder business; owns more than $1 million in real estate and buildings.

"You get enough different things, so one covers another on which you might have made a bad guess," say the partners.

• Machinery works for you—Although the principle that the machinery works for the contractor—not the other way around—is a cardinal one, T&D owns an impressive list of construction tools.

At the moment, it reads this way: 8 compressors; four crawler-mounted shovels of from $1\frac{1}{2}$ to $3\frac{1}{2}$ yd capacity; 15 crawler cranes; 16 truck cranes; 40 bulldozers and scrapers; 35 service trucks of various types; 36 16-yd dump trucks and several carrying scrapers, 5 general purpose trailers; three 10-ton rollers; plus miscellaneous graders, compactors, small pickups and job cars; three Gradalls.

The equipment is handled out of a central pool, of which Jack McMahon—a 30-year employee—is the boss.

It works this way: When a job has been bid and awarded, the job superintendent sits down with either Sheehan or Guerin (who split all jobs between them as project engineers) to work out details as to how the work will be done, materials and labor schedules—and how much and what kind of machinery will be needed when.

Available equipment is carefully checked for condition and capacity. McMahon's records are checked for availability of machinery now at work elsewhere. If it develops that some machine isn't available, either in the pool or on the job, McMahon has authority to rent the needed piece. A decision to buy a new machine rests with the partners.

"Many times," comments Tully, "it's cheaper for us to rent a machine for a day or two, get the work done and get it off the job, than to buy a new one that we'll have to scratch our heads about to keep busy."

"Better to be a little short," adds DiNapoli, "than have to work for a machine."

Maintenance is in the hands of Mike DiNapoli—a brother—as master mechanic, with a staff of 15 men.

• How it works—Staff and field operation seems to be pretty informal—but again there are some definite principles followed.

Sheehan and Guerin, with their 40-man office staff, do the estimating and detailed breakdown of the jobs prior to bidding—and with the final OK of the partners.

But once the job is won, the two engineers do not function as bosses, in relation to the job superintendent. Very specifically, they will tell you that their jobs are to function as staff officers with the superintendent, supplying him with needed facts and figures, aiding him in obtaining anything he needs for his work, overseeing schedules and purchases.

A case in point: On each major job, a field engineer is assigned. But his title is, by definition, "assistant *to* the superintendent". His work is to schedule the flow of materials and equipment, work with the purchasing department, and be of such other assistance to the super as may be needed. **But he doesn't run the show.**

Each job is responsible for its own stockpiling and scheduling of materials, ordered through a central purchasing department; each job does its own hiring.

The bookkeeping is done for each job separately, then consolidated weekly for all operations—and the report goes directly to T&D for evaluation. Overages or quick shifts of supplies from one job to another are handled by Sheehan or Guerin.

• The contracting business—"The main thing," sums up DiNapoli, "is how the job feels—and to perform on the contract.

"It's a funny business—the contracting business. Back some years ago, we bid in a job on the Grand Central parkway for about $1.6 million—and we were considerably lower than the next low bidder. The same afternoon, we bid in a $2.5 million job for the Long Island Railroad on some track relocation work—and won the job by a very small dollar margin. When it wound up, we lost money on the railroad work—but we made money on the parkway work.

"That's the contracting business—the best illustration I can give you."

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GREATER ULTIMATE STRENGTH! Ultimate strength, too, is greater through the use of Columbia Calcium Chloride. Typical increases from tests show 9% in 3 years, 10% in 5 years.

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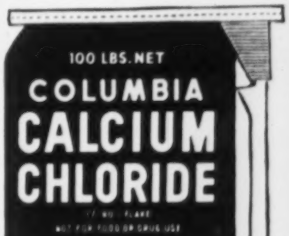

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Men and Jobs

Oregon's Robert Hugh (Sam) Baldock

A Modern Roadbuilding Pioneer Retires

Oregon Highway Engineer Robert Hugh (Sam) Baldock, internationally known highway construction authority and a past president of the American Association of State Highway Officials, has resigned from the post he has held for 24 of the 41 years he has been with the state commission.

His successor is Wayman C. Williams, Assistant State Highway Engineer since 1947 and Baldock's chief deputy since 1953.

Now 67, Baldock announced he will head a highway commission to Iraq in the service of the U. S. government.

Few other engineering officials in any state had as great measure of influence with, or respect of state legislators. Year after year his advice was accepted virtually unchanged by legislative highway committees, the governors and local committees petitioning the highway commission.

Indicative of the esteem in which he is held is the Oregon Highway Commission's decision to name in his honor the state's first freeway, linking metropolitan Portland with the state capital city of Salem.

• **A roadbuilding pioneer**—Baldock entered highway work in 1915 when Oregon created the department, starting as a district engineer and rapidly moving ahead. He became chief of the department Feb. 19, 1932, four years after the state took delivery on a big Buick sedan that saw from 1929 some 50,000 mi a year of service while Baldock learned at first hand what the motoring public needed.

Colleagues have since observed that his experiences in those years when modern highways were evolving in Oregon are responsible for the engineering innovations in traffic direction, wide passing lanes on grades, roadside parks and rest facilities which have marked Oregon's primary highway system.

He was an opponent of toll roads in the sparsely populated western region where, he argued, gasoline revenues

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GOFF KIRBY READY MIX COMPANY DISPATCHES TRUCKS BY RADIO, SAVES MONEY ON HAULING

Cleveland, Ohio Firm Operates 70 Trucks From Four Plants — Finds General Electric 2-Way Radio Helps Keep Costs Down!

Goff Kirby is one of Ohio's largest ready mix concrete firms. Its rolling stock is a familiar sight on construction projects throughout the Cleveland area. Last year, Goff Kirby Ready Mix Company was the only outside concrete supplier to deliver ready mix to the Ohio Turnpike project.

32 Trucks Have G-E Radio!

Nearly half the company's fleet is G-E radio equipped. These drivers are in constant contact with each of the four GK plants. Dispatch orders, changes, and special instructions by radio help make sure that loads get to a job on schedule. When breakdowns occur, the GK repair vehicle is on the scene in record time.

Radio Helps Keep Hauling Costs Down!

Edwin Harper, Goff Kirby president, reports that most of the cost of concrete is in the hauling charges. Typical rental of a concrete truck in his city is $11.50 per hour. By eliminating truck waiting time and driver overtime you save money. General Electric 2-way radio helps keep these costs down.

2-WAY MOBILE RADIO

Radio Can Help Your Operation, Too!

Goff Kirby is a typical example of progressive management in the concrete business. Your G-E Communications Counselor can tell you of others, show you how G-E Progress Line Radio can save you money. Call him in, or, write: *General Electric Company, Communication Equipment, Section X2286-16, Electronics Park, Syracuse, New York.*

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FOR REMOTE CONTROL JOBS on a great variety of CONSTRUCTION EQUIPMENT

TRU-LAY *Flexible* PUSH-PULLS

are Dependable and Accurate even under the most adverse conditions. They perform effectively under extremes of Heat or Cold . . . from jet engine temperatures to 70° below zero F. The inner, working member (lubricated for life during assembly) is fully protected by the tough, flexible conduit. Abrasive dusts, dirt and moisture are sealed out. Fittings are cold swaged to make them integral parts of the control unit. It is a matter of record that we have never heard of a TRU-LAY *flexible* PUSH-PULL wearing out in normal service. Use of these versatile, simple and rugged controls means the virtual Elimination of Maintenance.

Widely Used on Construction Equipment

Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread use of TRU-LAY PUSH-PULLS on Tractors and their accessories, Power Shovels, Winches, Road Graders, Road Oilers, Dump Trucks, Snow Plows, Engine-driven Pumps, Rock Crushers, etc.

On Construction Equipment these dependable Push-Pulls are used for the remote control of Hydraulic and Air Valves, Brakes, Clutches, Transmissions, Throttles, Chokes, Governors, Power Take-Offs, and on many other applications.

TRU-LAY PUSH-PULLS are precision products, not gadgets. They provide positive remote-action whether anchorages are fixed or movable . . . for light loads or loads up to 1,000 lbs. . . . and they are effective over short or long distances up to 150 feet or more.

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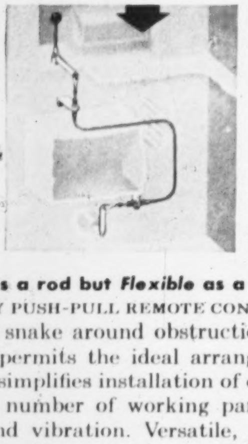
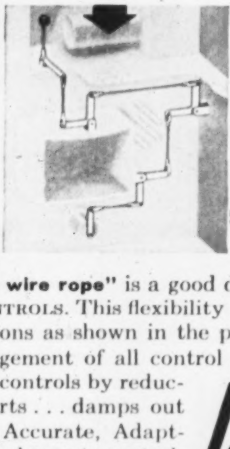


MECHANICAL LINKAGES
Complex • Many Parts
Many Points of Wear • Increasing Back-Lash • Loss of Accuracy • Vibration Rattles



"Solid as a rod but Flexible as a wire rope" is a good description of TRU-LAY PUSH-PULL REMOTE CONTROLS. This flexibility makes it possible to snake around obstructions as shown in the picture at the left . . . permits the ideal arrangement of all control elements . . . greatly simplifies installation of controls by reducing the number of working parts . . . damps out noise and vibration. Versatile, Accurate, Adaptable, Rugged . . . they are the ideal remote controls for Construction Equipment.

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from usage should support the work. He had successfully opposed repeated tollroad proposals for the scenic Columbia River gorge (U. S. Route 30) where multi-million dollar deep water fills and relocations were required to achieve a water level link in the Old Oregon Trail portion of the transcontinental Lincoln highway.

• **Among his accomplishments**—Engineers credit Baldock with:

1. Development of the technique of oiling roads which is now a national practice.

2. Pioneering of geometric highway design. On which Baldock explains "in order to correlate all the factors of design to one standard, we selected as a standard the speed at which motor vehicles could operate safely. That standard was adopted in Oregon in 1936. The nation adopted it in 1946, a decade later."

3. Authoring the weight-mile tax for trucks, devised in 1937 and adopted by the Oregon legislature in 1947 over bitter opposition of the Oregon and West Coast trucking industry.

4. Evolving the Oregon method of weighing economic factors of value in new highway routings.

• **A successful philosophy**—Baldock once told a reporter his job called for making a scientific approach to each problem—and then defending it against all political and economic pressures.

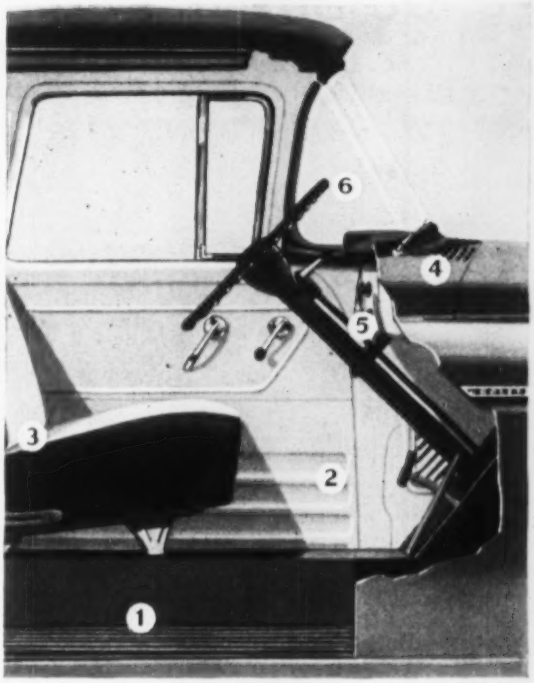
Born in Trinidad, Colo., Baldock was schooled at New Mexico Military Academy and entered the University of Colorado engineering school with the class of 1914. He received his bachelor of science degree in 1938 from the University of Oregon after some correspondence work, obtained his civil engineering degree the next year, and, in 1946 returned to the campus at Eugene, Ore. to receive an honorary degree of doctor of science for his contributions to highway engineering and public service.

He is a member of the New York Academy of Science, the Highway Research Board, Washington, D. C., and in 1950 received the George S. Barlett award for distinguished contribution to highway progress.

• **Successor**—Williams, 60-year-old native of Oregon and a World War I veteran, joined the department in March 1920 as a transitman, later became a resident engineer and then a division engineer.

Succeeding Williams is Forrest Cooper, construction engineer and member of the department since 1922

Here's the place to TAKE IT EASY on tough jobs!



New comfort-zone compartments in Chevrolet panel and Suburban Carryall models make your work easier and safer than ever before. And they give you the pleasure and prestige of style that equals many passenger cars!

Those numbers in the picture (right) point out features that make business almost a *pleasure* when you work behind the wheel of a modern Chevrolet Task-Force truck! Here are some of the reasons why hauling in a Chevy is *easy on you:*

❶ *Concealed Safety Steps*—located *inside* the doors—stay clear of snow, mud, and ice, give you firmer, safer footing. ❷ *Spacious leg room* helps keep you comfortable all day long, brings you home fresher and more relaxed. ❸ *Nu-Flex seat* design means *comfortable* hauling! Jack-stringer springs give ideal body support; seat back adjusts easily. ❹ *High-Level ventilation system* keeps the interior clean, cool, comfortable. Intake is at the bottom of the windshield—away from road heat and dust. ❺ *No-Glare instrument panel,* with handsome two-tone finish, puts instruments and controls within easy sight and reach. ❻ *Panoramic windshield* provides a full 1000 square inches of forward viewing area to make driving safer, easier.

And you'll find bright, stylish interior appointments that add to your sense of pleasure on the job. If your work calls for long hours on the road, you'll enjoy life more in a Chevrolet truck! Check one over for yourself at your dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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Anything less is an old-fashioned truck!

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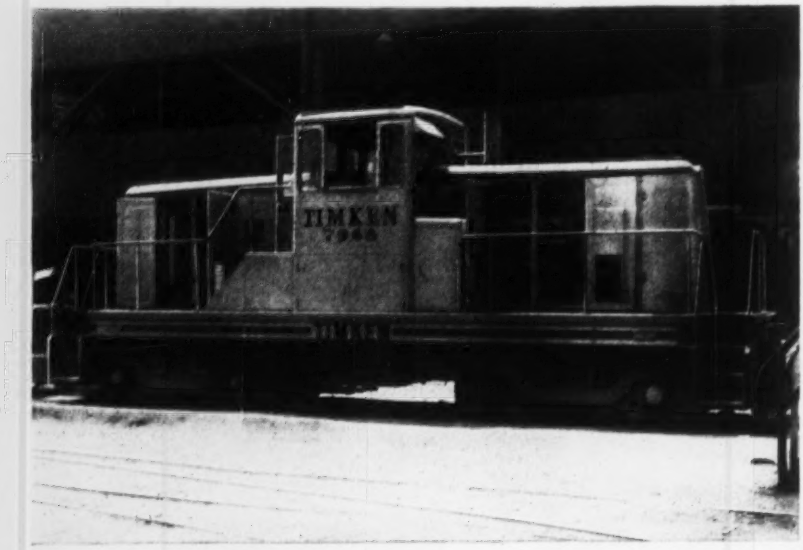

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24,242 hours of service in 39 months

Since March, 1953, two Hercules 6-cylinder TCD's have been providing dependable and economical power for this 80 Ton G. E. Diesel-Electric Yard Locomotive #7948. Operating in the melt shop of The Steel and Tube Division, The Timken Roller Bearing Company, these two Hercules TCD's are establishing new records for continuous trouble-free service.

According to log sheets kept by the Timken Company's locomotive shop foreman, this equipment has operated 24,242 hours since it was put in service. Moreover, these hours have been logged under adverse conditions of extreme dust and heat, 24 hours a day, seven days a week for an average of 621 hours a month. Because of this record of performance this locomotive has been nicknamed "Old Reliable" by the men in yard. "Old Reliable" has been serviced under the Timken Company's preventive maintenance program. The TCD's were overhauled at approximately 14,000 hours and will have almost that many hours before the next overhaul.

Other applications of Hercules TCD's such as busses, generator sets, mine cars, marine applications, etc., have established similar record of power and performance. Yes, Turbo-charging is not new at Hercules. TCD is just a new name for a tried and proven product.

*Turbo-Charged Diesel

HERCULES MOTORS CORPORATION

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Obituaries

Harold F. Hess, Executive Head of CIMA, Dead at 57

Harold F. Hess, 57, executive vice president of the Construction Industry Manufacturers' Association and nationally known as a leader in construction industry affairs, died suddenly August 3, at Evanston, Ill.

A native of Chicago, and a graduate of local schools, Hess had been a staff member of CIMA since its formation in July of 1949.

After leaving school, he served for eight years as director of public relations and manager of sales and advertising for the Chicago Association of Credit Men. From 1924 to 1939 he was engaged in publicity work for the Chicago Association of Commerce.

As the chief executive officer of CIMA, Hess was a frequent speaker on construction industry affairs and made many appearances before Congress to testify as an expert on pending legislation. Association officers credited him with a large share in the development of CIMA into a strong voice for the industry.

John Haines Gardiner, 61, district engineer for surface water investigations of the U. S. Geological Survey in Arizona, died in Tucson on July 27. Mr. Gardiner first became associated with the Geological Survey in Tucson in 1919, served as district engineer in Fort Smith, 1929-37, and was district engineer in Arizona from 1938 until the time of his death. He was president of the Midsouth section of the American Society of Civil Engineers in 1936-37, and the Arizona section 1941-42. He served as national ASCE director from 1945 to 1947.

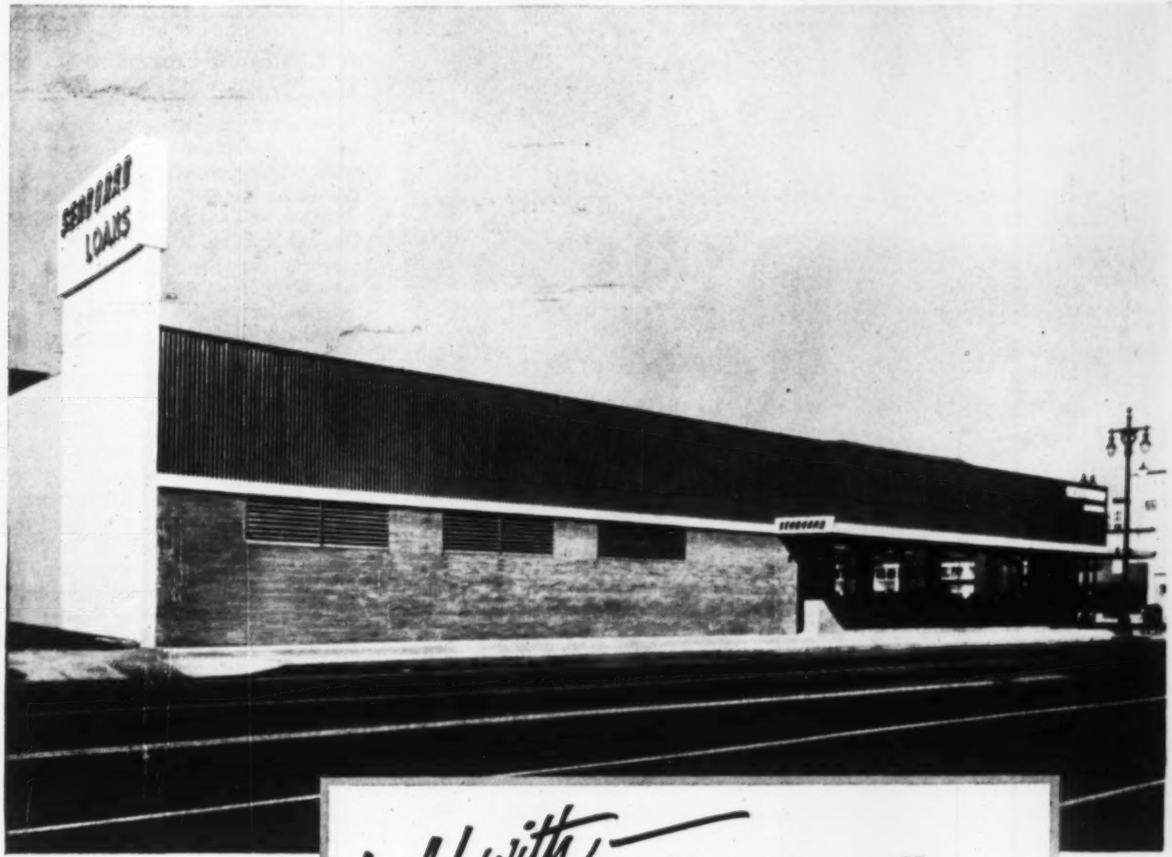
William Meadowcroft, 80, died in New York August 6. His fifty-five year span of engineering work included positions with the New York Board of Water Supply and the U. S. government in the Philippines. He was a 1901 graduate of Harvard College.

Edward M. Happ, Sr., 51, a general building contractor, died July 4 at his home at Doylestown, Pa.

George Edward Stevenson, 79, civil engineer and former assistant building inspector at Pueblo Colo., died July 23 at Denver.

Edward A. Devlin, 60, chief engineer at Sampson Air Force Base, died in Geneva, N. Y., July 13.

No costly maintenance problem here



In addition to its clean, trim appearance . . . Johns-Manville Corrugated Transite offers years of low-maintenance service and fire safety to Seaboard Finance Company's new Los Angeles office.

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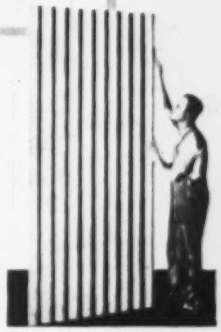

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For maintenance-free exterior walls and roofs, plus protection from fire, rot and weather

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As long as there's any amount of wearing surface left on the friction material, Lipe's Constant-Capacity Clutch never loses its torque capacity.

The reason? Automatic compensation for friction material wear through a unique application of the toggle lever principle. The toggles never go over center. As friction material is dissipated, their constantly increasing leverage builds up pressure in almost direct ratio to the losses sustained.

Arrangement and location of the toggles assure a uniform pressure application pattern. Every square inch of facing area engages simultaneously and in absolute parallelism. Creation of highly concentrated heat areas to cause spot burning is prevented.

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Soft Engagement—because the toggles absorb the initial energy of the springs . . . and because the speed of the toggle action fades as the pressure plate approaches the friction element.

High Thermal Efficiency—because the massive plate, ribbed for rapid radiation, is cooled by positively generated air currents.

No Servicing—because these self-compensating, non-adjustable clutches insure automatic internal adjustment throughout the life of the clutch facings.

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Legal

A Condition Precedent May Prevent Recovery

Material conditions of a contract must be complied with before a contractor can successfully sue for recovery under the contract.

A New York court has summed up the law this way: "Although we recognize the harsh results which may be occasioned by a failure to perform a condition precedent is often softened by the doctrine of substantial performance, Jacob & Youngs v. Kent, 230 N. Y. 239, 129 N. E. 889, 23 A.L.R. 1429; Spence v. Ham, 163 N. Y. 220, 57 N. E. 412, 51 L.R.A. 238; Van Clief v. Van Vechten, 130 N. Y. 571, 29 N. E. 1017, we cannot, on the other hand, excuse a complete failure to perform without either a valid reason for non-compliance or even an attempt to perform, the prerequisite considered by the parties sufficiently substantial to make it a condition precedent to payment. Schultze v. Goodstein, 180 N. Y. 248, 73 N. E. 21; Smith v. Brady, 17 N. Y. 173. Substantial performance might make compliance with an express condition unnecessary, but only when the departure from full compliance is an inconsiderable trifle having no pecuniary importance. Williston on Contracts, Vol. 3, Section 805. The Jacobs & Youngs v. Kent decision, supra, might be said to come in this class, as would Nolan v. Whitney, 88 N. Y. 648, Woodward v. Fuller, 80 N. Y. 312, and Spence v. Ham, supra. But this rule cannot apply where there is not only a lack of even partial performance or an attempt to perform, but an impossibility of performance brought on by the promisor himself."

The contract in question was for construction of a building. It stated, "Before final payment, the contractor shall submit evidence satisfactory to the owner that all payrolls, material bills and other indebtedness connected with the work have been paid."

The contractor brought an action to recover the balance due under the contract and obtained a judgment. This judgment was reversed by the appellate court, that court holding that the failure on the part of the contractor to produce proof that it had paid all bills for labor and material used on the job was a failure to comply with a condition precedent to recovery and as a result, the contractor was not entitled to a recovery. The fact that the owner did not make a demand for

(*Legal continued on page 93*)

compliance with the contract requirement did not alter the situation.

At the trial the contractor conceded that he had not paid for material and labor and that he was financially unable to do so. The court further stated: "The failure of the respondent contractor to comply with the condition regarding submission of evidence of payment of potential lienors, together with his admission, untempered by any valid excuse, that he could not comply with such condition, leaves us no choice but to find that the appellants' (owners) motion to dismiss the complaint should have been granted. The judgment is reversed and the complaint dismissed.

(1) Witherell v. Lasky, 145 N.Y.S. 2d 624, Appellate Division, N.Y. Nov. 2, 1955.

Substantial Performance A Condition to Recovery

The burden of proving substantial performance in a contractor's suit for the unpaid balance due under a contract is on the contractor, even though the owner has raised defective workmanship as a defense.

In reversing a trial court ruling[1] that the owner is the one who has to prove defective performance, a Massachusetts court said: "No principle of law is more clearly established than that 'When a party binds himself by contract to do a work or to perform a service, he agrees by implication to do a workmanlike job and to use reasonable and appropriate care and skill in doing it,' Abrams & Co. v. Factory Mutual Liability Ins. Co., 298 Mass. 141, 143, 10 N.E. 2d 82, 83. And where a contract contains mutual and dependent covenants . . . . the burden is on the plaintiff (the party bringing the suit) in an action for breach of the contract to prove the contract and the compliance with his covenant in order to receiver. . . . Waldo Bros. Co. v. Platt Contracting Co., Inc., 305 Mass. 349, 359, 25 N.E. 2d 770, 774. See Pearson v. O'Connell, 291 Mass. 527, 529, 197 N.E. 486'."

(1) George v. Goldman, 131 N.E. 2d 772, Feb. 1, 1956.

Specifications Often Form Part of Building Contract

When a building contract incorporates the specifications by reference, the contract price covers all work called for by both documents.

For this reason, a California court last year denied a contractor extra payment for work he claimed was not

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Modern design, air-cooled Kohler Engines in sizes from 2.5 to 26 H.P. offer a power range to fit all applications requiring a reliable and economical power source.

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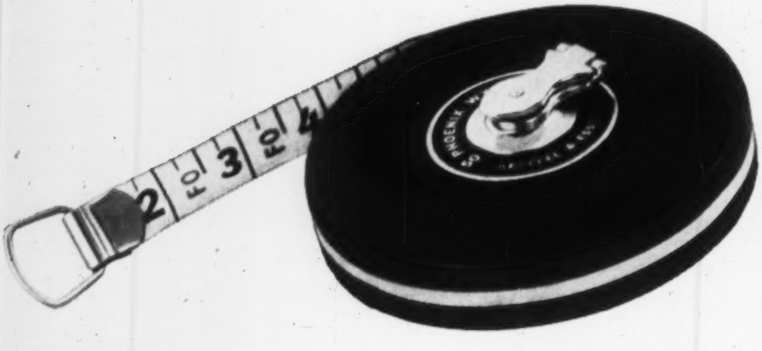

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called for by the contract. The owner's defense was that the work in question was included in the specifications, which, in turn, had been made part of the contract.

"Effect must be given", the court noted, "to writings incorporated into the contract by reference; hence a contract will be construed with respect to plans and specifications incorporated by reference. However, a plan for work is subsidiary to the contract and the latter is controlling in the case of a discrepancy, and where the language thereof will permit, the specifications will be construed so as to uphold the validity of the contract. Fidelity & Deposit Co. of Maryland v. Maryland Board of Councilmen, 253 Ky. 802, 70 S.W. 2d 685; Utility Const. Co. v. Borough of South River, 136 N.J.L. 633, 57 A. 2d 389; Dean v. City of New York, 167 N.Y. 13, 60 N.E. 236; 63 C.J.S., Municipal Corporations, Section 1169, page 854."[1]

[1] Oberg v. City of Los Angeles, 281 P. 2d 591, Court of Appeals of Cal., April 17, 1955.

Exact Proof Not Required In Establishing Damages

Where there has been a breach of contract and damages have been sustained, the fact that the amount of damage sustained is not definite does not bar a recovery of the same.

"The law does not require absolute certainty of data upon which lost profits are to be estimated. All that is required is such reasonable certainty that damages may not be based wholly upon speculation and it is sufficient if there is a certain standard or fixed method by which profits sought to be recovered may be estimated with a fair degree of accuracy. Anvil Mining Company v. Humble, 153 U. S. 540, 14 S. Ct. 876, 38 L. Ed. 814; Eastman Kodak Co. v. Southern Photo Materials Co., 273 U. S. 359, 47 S. Ct. 400, 71 L. Ed. 684."

Where a contractor has been prevented from performing his contract or where performance has been delayed by the acts of the owner, or the cost of the work increased by the wrongful acts of the owner or his agent, the proof of damages is generally shown by expert testimony of what the performance of the work actually cost and what it would have cost except for the wrongful acts of the owner or his agents. The difference represents the damages sustained.

(1) Huntley v. United States, 135 F. Supp. 542, U.S. Court of Claims, Nov. 8, 1955.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

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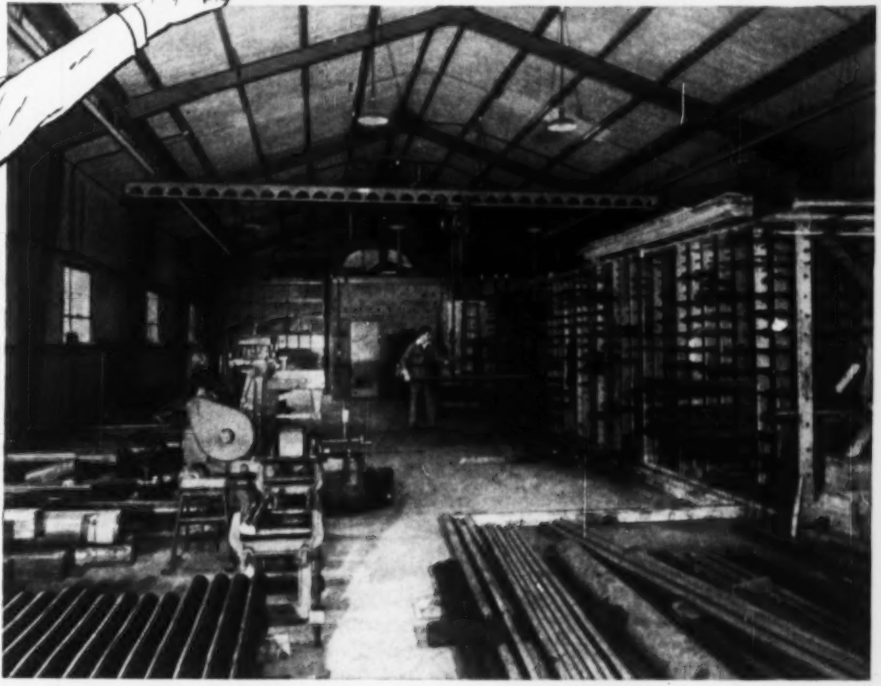

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Butler Prefabricated Buildings are especially well suited for overhead cranes. Their cross section makes it possible for a crane to span the entire width and provide service for all of the floor area. Their sturdy construction enables them to support heavy loads. The Cleveland Tramrail crane here is hand-propelled with chain hoist. It has 4000 lbs. capacity. The building is 40' x 100'.

3-ton Cleveland Tramrail completely motorized, push-button-operated crane in 50' x 230' Butler Pre-engineered Building serving large electrical manufacturer on West Coast. This is an efficient, low-cost arrangement for stocking and handling large pipes and bars.

Do you need a building for warehousing or manufacturing? One at low cost? Of good durable construction? Equipped with overhead materials handling facility? Then look into prefabricated metal buildings provided with a Cleveland Tramrail Crane. This combination has proven to be economical and efficient for a number of companies.

Prefabs will usually support crane loads from 1000 to 6000 lbs. depending upon type and size building. They can be made any length and by joining units can be made of various widths.

Hand-propelled cranes with electric hoists are generally most practical in prefabs. Because Cleveland Tramrail cranes and carriers roll so easily, very little effort is required to propel them manually. While chain hoists are satisfactory, but slow, most users find electric hoists desirable to do the heavy lifting.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
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OVERHEAD MATERIALS HANDLING IN PREFABRICATED BUILDINGS
BOOKLET No. 2020A
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

★ ★ ★ ★ ★

FIRST
STEEL MESH DECK
Still Making History!

The first installation of an open steel grid flooring on any bridge in the world was made in 1932, on the University Bridge, Seattle, Washington, by the Irving Subway Grating Co. The previous solid pavement on the bridge had been plagued by frequent repairs and accidents.

After 24 years this decking is still in service on the Seattle Bridge. It has had no major repairs and has never even been painted. Not a single accident has occured due to the bridge flooring.

Since then, 80% open Irving Decking has been used advantageously on hundreds of other bridges.

This remarkable record of service speaks for itself.

★

Write for complete information on Irving Bridge Decking.

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Books

East-West Architecture

ITALY BUILDS—By G. E. Kidder Smith, 264 pp. Reinhold Publishing Corp., New York, N. Y. $10.

ARCHITECTURAL BEAUTY IN JAPAN—By S. Horiguchi and R. Hamaguchi, 164 pp. Kokusai Bunka Shinkokai, Osaka Shosen Building, Kyobashi, Chuo-ku, Tokyo, Japan.

Modern architecture has certainly disproved Kipling's theory "Ne'er the twain shall meet." Not only do they meet, but in many instances it becomes difficult even to distinguish East from West. Upon leafing through the pages of these two books and observing contemporary structures in Japan and Italy, one cannot help noticing that sometimes national character and flavor has been sacrificed almost totally for prefabricated units and functional construction. In many cases, if a contemporary Japanese building were suddenly transplanted on Italian soil (or for that matter, American soil) or the reverse, neither would appear incongruous with its surroundings.

Fortunately, however, not all current construction has followed this trend to anonymity; many architects have retained and indeed capitalized on the cultural tone of their respective lands. It is the impressions of the latter that the authors of these books have generally pictured for the reader in these profusely illustrated volumes.

Italy Builds describes, by pictures and text, the architectural inheritance of this Latin country. The book is divided into three parts. Part 1 is devoted to the land—mountain, hill, plain and coastal architecture. Influences of climate, raw materials, and historical events upon native building types are carefully considered. Following pages examine Italian squares or piazzas and the Italian urban scene. Discussion of the former varies from "the medieval concept of highly enclosed space of picturesque and rather emotional charm, to the sophisticated and mathematical centralism of the static Renaissance, to the dynamic feeling of mass movement in space of the Baroque." In his presentation of urban settings, the author dwells lovingly upon the grandeur of cathedrals, the grace of arcades and galleries, as well as the charm of an Italian street.

Part 3 describes and evaluates current construction—from candy shops to steam plants. The influence of war and politics, the feverish rebuilding of peacetime, outstanding characteristics of new work, weaknesses, and felicitous mixtures of new structures with old are all illustrated.

The Japanese publication is not quite as encompassing or as critical of native architecture. The prime purpose of the authors is to present examples of the best achievements, both old and new, of Japan; this they do admirably.

Cultural and historical development of that country is clearly expressed in the evolution of its architecture. Because of the geographic and climatic conditions of Japan, much construction was of wood—stone or brick having been found unsuitable; consequently, even shrines were made of this material. "Allowing a period of twenty years as the limit for decay, the building is reconstructed according to the first design, renewing the building indefinitely, and thus the building co-exists with the nation itself, thereby originating a style of memorial architecture. Like a living thing, the building discards the old, and replaces it with new material embodying the natural law of renewal."

New structures, standing side by side with old, have an entirely different quality. Steel frames and reinforced concrete are the new order of the day. However, one can still see similarities between the two. The beauty of proportion and logic of construction that are characteristic of Japanese wooden biuldings are made possible through a certain principle which has always existed in Japanese design—module planning. The principles of prefabrication are not strange to the Oriental scene.

Steel Detailing

STRUCTURAL SHOP DRAFTING, VOL. 3—American Institute of Steel Construction, 101 Park Ave., New York 17, N. Y. 218 pp. $3.

The third and last volume of this AISC textbook covers complicated details of trusses and girders. Like the other volumes, it is suitable for use in advanced training in structural shop drafting and in design office practice.

Both riveted and welded girders and trusses are studied. Included are solutions to the problems of rivet spacing, sizing and spacing of welds, splicing and cambering, as well as preparation of end bearing and expansion joint details. Differences between AISC, AASHO and AREA specifications are pointed out. Also looked into are erection and driving clearances.

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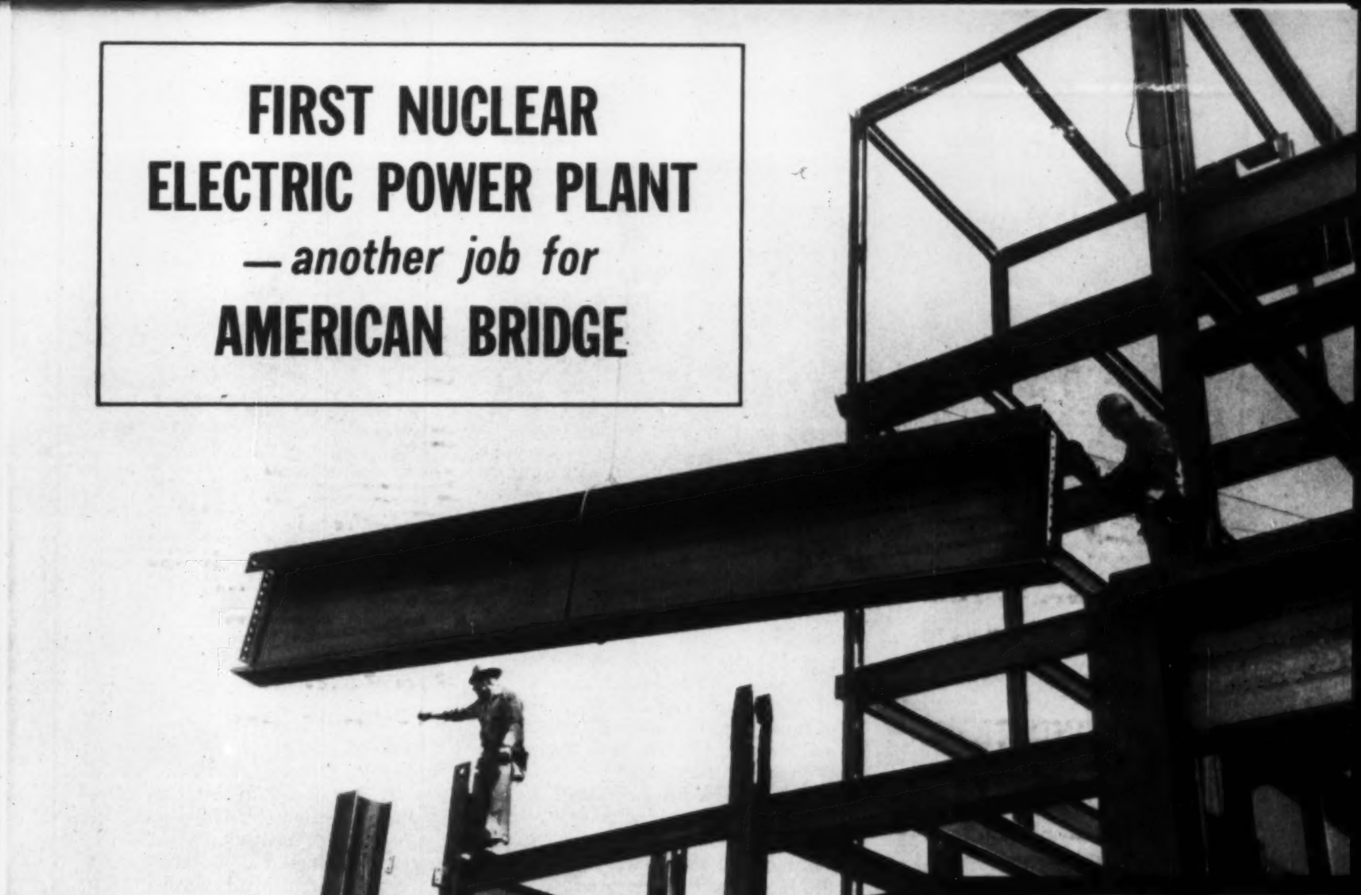
—another job for

AMERICAN BRIDGE



"1700 tons of structural steel going up on schedule"

reports Superintendent Jim Basden, power plant job veteran

In his five years as an American Bridge superintendent, young Jim Basden has erected several power plant jobs, including the great Elrama and Phillips Power Plants. Now he is running another power plant job—one that could have a profound effect throughout industry.

It's the Shippingport Power Station of Duquesne Light Company, 25 miles from Pittsburgh, Pa. It features the nation's first full-scale nuclear reactor for producing electrical energy.

The 1700 tons of structural steel which American Bridge is fabricating and erecting for this job is going up on schedule. More than two-thirds of the steel is already in place and Jim Basden's crew will finish the job on schedule.

Working with a 60-ton crane with a 90-foot boom, the experienced American Bridge crew is setting the steel for the three-story turbine room, the six-story service building, the fuel-handling building, the air-treatment building, the reactor plant service building, the foot bridge between the turbine room and screen house, and the turbo-generator supports. Girders in latter weighed 82 tons each, and required a second crane.

Men like Jim Basden and his erection crew, plus the engineers, the fabricating crews, the estimators, and many others bring a wealth of experience to every American Bridge job. This experience, combined with the finest in fabricating and erecting equipment, is available to you for large jobs or small. Call our nearest contracting office.

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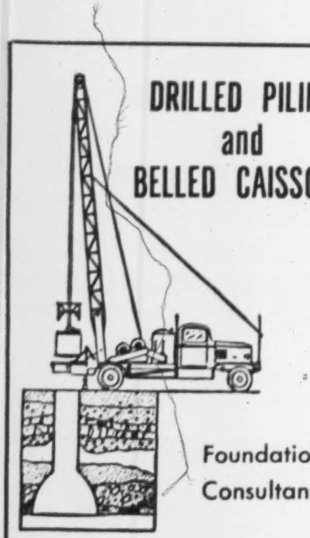

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Unit Prices

Minnesota Airbase Changes to Rigid Paving

Work on this $794,775 apron and taxiway paving job at the Minnesota Air National Guard Base, Williamson-Johnson Airport in Duluth, Minn., can be done only half at a time, and cannot interfere with flight operations. W. C. Lincoln, resident engineer, Municipal Airport, Duluth, is the engineer. St. Paul District of the Corps of Engineers let the contract to Ashbach Construction Co., St. Paul, Minn., who underbid the second low bidder by 1.35% and the engineers' estimate by 9.31%.

The new 11-in. rigid cement concrete pavement on 11-in. rigid base course will replace an old flexible surface on approximately 38,000 sq yds of parking apron and 27,000 sq yds of taxiways. Nearly 135,000 cu yds of frost group F-4 soils will be removed and replaced to grade with frost group F-2 on better soils.

In addition to the subdrain and storm drain system with 9,650 lin ft pipe, up to 38 in. in diameter, the contract calls for a gravel surfaced road, flexible pavement driveways.

Class A concrete must test at 650 pounds per sq in. at 90 days.

1C	Ashbach Const. Co., St. Paul, Minn.	$794,775
2	S. J. Groves & Sons Co., Minneapolis, Minn	805,615
4	Falda & Sons, Inc., St. Paul, Minn	963,313
EE	W. C. Lincoln, resident engr, Municipal Airp.	876,337

Bids: 4-24-56 Items	Unit	Quantity	Unit Prices 1 C	 2
Apron & taxiway rigid pavement:				
Pave, flexible, remov	sy	46,890	$0.186	$0.20
rigid, remov	sy	325	1.24	2.15
Excavation	cy	134,675	0.56	0.55
Subgr matl, select	cy	92,400	1.70	2.00
Filter crse, granular	cy	7,290	3.00	3.00
Base crse, rigid pave	cy	12,665	3.00	3.00
Pave, conc	cy	20,150	11.66	12.00
Cmt for conc	bbl	27,710	5.15	4.80
Tie-down anchors	ea	367	9.70	5.00
Gravel surfaced road:				
Excavation	cy	745	1.24	0.60
Subgr matl, select	cy	180	3.47	2.00
Filter crse, granular	cy	375	3.60	3.00
Subbase crse, CBR 25	cy	820	4.70	3.00
Agg surf crse, stabl, CBR 50	cy	410	5.58	4.00
Flexible pavement driveways:				
Excavation	cy	260	1.55	0.60
Filter crse, granular	cy	80	4.03	3.00
Subbase crse, CBR 25	cy	165	4.96	3.00
Base crse, CBR 80	cy	125	7.44	5.75
Prime coat, bit	gal	245	0.25	0.25
Surf crse, bit	t	85	18.16	12.00
Bit matl	gal	1,070	0.12	0.25
Subdrain system:				
Subdrain, perf pipe	lf	7,140	4.46	1.50
Manholes	ea	14	372.00	260.00
Flushing & observ riser	ea	13	52.10	70.00
Outlet line, 6"	lf	20	7.44	8.50
8"	lf	465	4.70	3.25
Storm drain system A:				
RCP, 18"	lf	200	7.00	7.10
24"	lf	70	9.90	9.50
36"	lf	770	18.00	19.00
Inlet	ea	3	250.00	450.00
Manhole No. 4	ea	1	430.00	925.00
No. 5	ea	1	207.00	475.00
CMP, 36"	lf	85	14.88	18.00
Outlet structure	ea	1	471.00	2,100
Storm drain system B:				
CMP drain, remov, approx 50 ft	ls	job	446.00	500.00
RCP, 24"	lf	350	10.70	11.70
30"	lf	100	16.10	14.00
Inlet	ea	1	610.00	450.00
Culvert under north taxiways:				
CMP, remov, approx 300 ft	ls	job	496.00	1,000
RCP, 30"	lf	300	10.54	14.00
CMP, 30"	lf	100	8.70	12.70
Culvert under gravel road:				
CMP, remov, approx 60 ft	ls	job	124.00	100.00
CMP, 30"	lf	60	7.30	15.50
Hydrant, relocate	ea	1	186.00	400.00
Pipe line, water for hydr	lf	30	7.44	15.00
MH, san sewer, raise	ea	3	118.00	110.00
Taxiway lighting	ls	job	7,138	7,500
Power receptcl, i & floodlights, relocate	ls	job	1,018	1,000
Marking	ls	job	322.00	750.05
Topsoil	ls	job	6,700	8,860
Seeding	ls	job	3,350	9,000
Sodding	sy	17,785	0.50	0.50

Time to complete: 200 calendar days
*CBR California Bearing Ratio

Rock Raises Cost of Delaware Sewer

This $39,059 sanitary sewer in Northfield, Delaware, For New Castle County is for a fully built-up community with high standard streets.

Considerable rock excavation is expected for which 30.7% of the cost is budgeted. Standard vitrified clay pipe, 6 to 8 in. in diameter, for a total of 4,441 lin ft, accounts for 52.1% of the cost. Trench depths range to 14 ft with unit prices taken on each 2-ft increase in depth. Thus, lines are located between property line and curb. John I. Cahalan is county engineer.

James Julian Inc., Wilmington, Del., bidding as Eastern States Construction Co., took the contract at a price 6.1% below the second low bid but only 0.14% below the engineer's estimate. The contractor was low also on completion time, June 15 to August 30, 1956. The high bid gave November 15 as completion target.

1C	Eastern States Const. Co. (James Julian Inc.), Wilmington, Del	$39,059
2	DiSabatino Bros., Wilmington, Del	41,603
5	C & T Affiliates Inc., Collingswood, N. J.	64,986
EE	John I. Cahalan, County Engineer	39,114

Bids 5-29-56 Items	Unit	Quantity	Unit Prices 1 C	 2
Pipe, VC, 8", 0-4'	lf	5	$4.00	$3.80
4-6'	lf	5	4.00	3.80
6-8'	lf	466	4.00	3.80
8-10'	lf	1,385	4.50	3.95
10-12'	lf	1,130	4.90	5.50
12-14'	lf	360	5.20	6.50
6", 0-4'	lf	5	4.00	4.00
4-6'	lf	5	4.00	4.00
6-8'	lf	50	4.20	4.00
8-10'	lf	575	4.20	4.00
10-12'	lf	315	4.50	4.50
12-14'	lf	140	5.20	5.00
Fittings, Y, 8x8x6"	ea	58	8.85	5.75
Laterals	lf	10	10.00	22.00
MH, brick, depth 6' or less	vf	16	185.00	195.00
above 6	vf	61	20.00	22.00
drop section	vf	90	20.00	35.00
Lumber, left in trench	Mfbm	4	70.00	100.00
Concrete, cl B	cy	10	25.00	18.00
Crushed stone, #130	t	200	6.00	6.00
Excavation, rock	cy	400	30.00	35.00

Murray Construction Co., Waverly, Ohio, specified torque converter drive for this new Allis-Chalmers HD-16. A-C Torque Converter Drive, which is optional on the HD-16 and standard on the HD-21, incorporates Twin Disc Torque Converter components as standard equipment.

Torque Converter Tractors do more work, faster . . . Last Longer!

Two people who should know—both owner and operator of an Allis-Chalmers HD-16C torque converter tractor—unanimously agree that a torque converter crawler *works faster, works longer, lasts longer and produces more.*

As Robert Murray, co-owner of Murray Construction Co., Waverly, Ohio, puts it, "Our new HD-16 tractor is a speedy worker and the torque converter is one of the primary reasons. We also find we haul more yardage for each dollar spent."

Operator Kenneth Austin adds, "Our former tractor would stall loading rock like we encounter on this job, but the '16' goes right through. The torque converter saves clutching and makes it a lot easier for me. At the end of a day's work I'm not nearly as tired."

Murray's HD-16 is used for dozing and for pulling a scraper in rock-like shale—in the relocation of route 73, northwest of Peebles, Ohio. On one stretch of road, fill being hauled 1200 ft. by the 150 hp crawler and a 15-yd. scraper, will raise the highway grade where it crosses a valley.

Torque converter drive offers you *higher work output in less time, and longer equipment life* because it *automatically* matches power to load demand, thus minimizing or eliminating gear shifting . . . it eliminates harmful engine lugging and stalling . . . it cushions *out*—through *fluid* connection—overloads, shock loads and vibrations—providing *longer tractor life* with *less maintenance.*

For these reasons, Allis-Chalmers designed torque converter drive into their HD-16 and HD-21* Crawler Tractors. Since 1940, they have worked closely with Twin Disc Engineers, and have standardized on Twin Disc Torque Converter components.

Specify a torque converter for *your* next Allis-Chalmers HD-16! See your tractor dealer today, for complete information on A-C Torque Converter Drive.

***Torque Converter Drive is standard equipment on the HD-21.**

TWIN DISC

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division) Rockford, Illinois

Materials and Labor Prices Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Aug. 23 — Wood Products, Glass, Explosives, Chemicals
- Sept. 6 — Cement, Aggregate, Ready-mixed Concrete, Asphalt
- Aug. 30 — Clay Products, Lime, Plaster, Paint, Roofing, Wage Rates, Building Board, Lath, Insulation

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.00	$4.85	$5.075	$9.25		$101.50	$120.00	$6.35	$8.775	$6.025	......
Chicago Area	5.00	4.85	5.075	9.25	$5.90	101.50	120.00	6.35	8.775	6.025	
Pittsburgh Area	5.00	4.85	5.075	9.25	5.90	101.50	120.00	6.35	8.775	6.025	$12.15
Buffalo Area	5.00	4.85	5.075	9.25	5.90	101.50	120.00	6.35	8.775	6.025	12.15
Cleveland	......	......	5.075	9.25	5.90	......	......	......		......	12.15
Youngstown Area	......	......	5.075	......	......	......	......	......	8.775	......	......
Geneva	5.00	4.85	......	......	......	......	......	......		......	......
Los Angeles	......	......	......	......	5.90	......	......	......	8.775	......	......
Pueblo	......	......	......	......	......	......	......	6.35	8.775	6.025	......

IRON AND STEEL PRODUCTS—F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	EXPANDED METAL LATHk Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	EXPANDED METAL LATHk Std. ribbed 3.4 lb.
Atlanta	$8.94	....	$8.91t	$49.50	$54.00
Baltimore	8.03	8.50j	....	39.00	43.50
Birmingham	7.28t	7.12t	7.12t	61.00p	67.00p
Boston	8.77a	8.57	8.57	48.40	53.35
Chicago	7.95/8.00	7.00gu	7.00gu	49.00‡	60.00‡
Cincinnati	8.40ak	7.69rs	....	41.00mn	45.50mn
Cleveland	7.76	6.41c	....	41.00‡	45.50‡
Dallas	9.05	7.40	7.40	49.00	52.00
Denver	8.95	8.00c	....	54.00n	60.00n
Detroit	8.55	8.13	....	56.00	63.00
Kansas City	8.75a	8.59	....	49.00	60.00
Los Angeles	8.30fd	7.75	....	54.50	60.50
Minneapolis	7.83d	8.14b	8.14b	42.50	47.00
Montreal	7.70–8.15iC/8.05/8.45A	7.50/8.95i	7.50/8.95	65.70h	70.20h
New Orleans	....	7.55aks	....	45.50	50.00
New York	8.71	7.93y**	7.93y**	44.50no	51.00no
Philadelphia	8.04	7.14	....	42.50‡	47.00‡
Pittsburgh	7.43	6.57**	....	42.50	47.00
St. Louis	8.33s	7.35c	7.35c	57.00l	59.00l
San Francisco	8.55	7.55j	....	47.50	53.00
Seattle	8.50	7.70v	....	55.00nr	61.00nr
Toronto	11.50*	7.25	7.25	56.00nq	59.00nq

Quantity extras, per cwt: under 100#, +$9; 100–399#, +$6; 400–999#, +3.50; 1000–1999#, +1.00; 2000–4999#, base price; 5000–9999#, −10¢; 10,000–19,999#, −30¢; 20,000–29,999#, −50¢; 30,000# and up, −70¢

EXTRAS, per cwt—•Quantity: less than 700#, +50¢; 700–1499#, +25¢; 1500–7999#, +10¢. •Size†: #2 +$2.20; #3 +$1.10; #4 +80¢; #5 +62.5¢; #6, #7 +45¢; #8, #9, #10, #11 +35¢. •Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job). •Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–500 tons, +50¢ but not over $4500; 20–200 tons, +60¢ but not over $2000; 5–20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70. •Design only: +60¢.

WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill

4 × 16 in., No. 5 & 10 wires—
Joliet, Ill., Donora, Pa., Monessen, Pa. $3.66

4 × 12 in., No. 8 & 12 wires—
Joliet, Ill., Donora, Pa., Monessen, Pa. $2.39

6 × 6 in., No. 6 & 6 wires—
Joliet, Ill., Donora, Pa., Monessen, Pa. $3.85

•‡ Delivered •a 2000–9999# •b 10,000–18,999#, fob city •c 20 tons or over •d 10,000–19,999# •e Intermediate struct'l •f incl. delivering in free zone •g CL •h list price; dominion tax exempt; add provincial and municipal taxes •i add dominion, provincial and municipal sales taxes •j intermediate and hard grade •k fob city •l delivered; contractor to do unloading •m copper alloy •n LCL •o asphalt coated •p del. of 500 sq. yd. or more. •q 3 lb •r 2% off for cash •s 2,000–4,999# •t add 15¢ del. •u add 6.25¢ switch •v incl 15¢ del. •x add 5¢ switch •y add 30¢ del. •z add 10¢ del. •A American made. •C Canadian made. •* Aver. of Canadian & American. ** 4 tons

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEXa	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	ASBESTOS CEMENT PIPE 12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	VITRIFIED SEWER PIPE std. 12 in. s.s.	VITRIFIED SEWER PIPE 24 in. ds.	VITRIFIED SEWER PIPE 36 in. ds.	CLAY DRAIN TILE ASTM C4-24 PER 1,000 ft., carload lots, f.o.b. 6 in.	CLAY DRAIN TILE 8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	CONCRETE SEWER PIPE 24 in.
Atlanta	123.5	$1.56	$2.60	$.55	$1.30	$4.95	$12.25	$225.00		$0.88m	$3.80m
Baltimore	132.9	1.56	2.60	.665	1.28	5.08v	12.71	187.80	$289.20	1.01	2.75m
Birmingham	119.0	1.56	2.60	.44	.81	3.55w	10.37w	260.00‡	440.00‡	1.90m	4.00
Boston	135.6	1.58	2.39	.788qrt	1.502qrt	6.211qrt		203.40r	312.60r	1.54mg	3.65mg
Chicago	133.4	1.56	2.39	.93m	1.78m	7.52m	21.16m	150.00‡	270.00‡	1.00	3.65
Cincinnati	128.2	1.58	2.47	.665t	1.2825t	4.905t	12.505	240.00	370.00	.85m	3.25m
Cleveland	134.2	1.58	2.47	.567s	1.0935s	4.545t	11.787t	149.40m	231.60m	.85m	3.50m
Dallas	130.5	1.58	2.73	.439	.799	4.00b	9.17b	......	......	.63	1.86
Denver	140.1	1.66	2.73	.47n	.84n	3.73n	......	......	......	.74m	2.50m
Detroit	134.5	1.58	2.47	.85	1.65	6.45	17.50	240.00m	370.00m	.95	3.82
Kansas City	131.1	1.58	2.47	.61	1.105	4.54	12.75	250.00	480.00	.90	2.90
Los Angeles	140.2	1.66	2.39	.67l	1.46l	5.97l	14.89l	228.20l	348.90l	1.02	3.02f
Minneapolis	142.0	1.61	2.60	.83mo	1.50mo	6.50mo	......	......	......	1.76h	5.74h
Montreal	......	......	......	1.02u	1.80u	6.30u	12.00u			1.17h	3.11j
New Orleans	126.1	1.56	2.60	.51	.925	5.18	......	350.00p	550.00p	.75	2.50
New York	131.4	1.58	2.39	.99	1.88	7.37	19.06			1.15	3.00
Philadelphia	130.8	1.56	2.39	.65	1.25	4.95v	12.65v	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	135.3	1.58	2.39	.468m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St. Louis	129.6	1.56	2.47	.59	1.08	4.45	10.80	180.00l	380.00l	1.30il	2.80il
San Francisco	140.2	1.66	2.39	.74d	1.62d	6.59d	16.47d	235.00l	392.00l	1.05m	3.30m
Seattle	140.8	1.66	2.39	.66b	1.26b	6.34	17.90	205.00k		1.00k	3.10k
Toronto	......	......	......	.76	1.425	6.00		157.00	280.00	.87	3.05

•WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnote

Mill	2½ & 3 in.; Butt Weld† Black %	2½ & 3 in.; Butt Weld† Galv. %	3½ to 6 in.; Lap Weld† Black %	3½ to 6 in.; Lap Weld† Galv. %
Lorain, Ohio	29.00	11.75	......	......
Aliquippa, Pa	29.00	15.25	19.50a	5.25a
Sparrows Pt., Md	27.00	8.75	13.50a	+5.25
Benwood, W. Va	29.00	10.75	19.50d	+0.75d
Youngstown, O	29.00	10.75	......	......
Indiana Harbor, Ind	28.00	9.75	18.50ab	+0.25a
Sharon, Pa	29.00	10.75	......	......
Wheatland, Pa	29.00	10.75	19.50a	+0.75a
Etna, Pa	29.00	15.25	17.50d	3.25d
Fontana, Calif	16.50b	2.75b	7.00ab	+7.25ab

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. 5 and 6 in. d 6 in.

•‡ Delivered. •a PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 119.0; Burlington, N. J., 127.8. •b Extra strength ASTM C 200-44T •c 4-in., $113 •d SS361-A •e 30-in. •f 21 in. •g culvert pipe; reinforced, ASTM C 76-41 •h reinforced, ASTM C 75-41 •i reinforced, ASTM C 76-37 •j centrispun; no standard specs. in Canada •k 2% off for cash •l fob plant •m truck delivery •n LCL delivered, fob truck •o listed price based on LCL (no min.) •p freight allowed to destination in city •q ASTM C 13-40 •r CL fob origin, freight allowed •s 2 ft lengths •t 3 ft lengths •u CESA A 60-1941 specs, used •v standard strength •w ss; add 20% for d.s.

• WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft.(°based on approx. $200 per net ton): Butt Weld ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 65.54, galv., + 95.77; 1¼ in. black, + 65.54, galv. + 95.23, 1½ in. black, + 61.79 galv. + 91.22; Lap Weld — 2½ in. to 3 in. black + 67.95 galv. + 95.77; 4½ in. to 6 in. black + 64.74 galv. + 90.68 Add freight rates plus 3% transportation tax to get destination price.

20-ft sections of Beth-Cu-Loy pipe for drainage of new state highway

Lane Pipe Corporation, of Bath, N. Y., fabricated these sections of 24-in. Beth-Cu-Loy pipe in 20-ft lengths for use in parallel drainage along Route 18 near New Brighton, Pa. The favorable weight-to-strength ratio of Beth-Cu-Loy corrugated galvanized steel culvert sheets made the long lengths possible, thus reducing the number of field joints and speeding the installation.

Pipe made of Beth-Cu-Loy is easy to handle, even in such long sections, and usually without need for heavy equipment. It is durable enough to withstand the impact and vibration of modern high-speed traffic. Flexible enough to simplify alignment and conform to grade. It absorbs the action of freezing and shifting soils, and reduces root hazards.

Beth-Cu-Loy is open-hearth steel with copper added for corrosion-resistance. Additional protection is provided by a thick, tight coating of Prime Western zinc. Corrugated galvanized steel culverts are still going strong after decades of service under a wide variety of conditions.

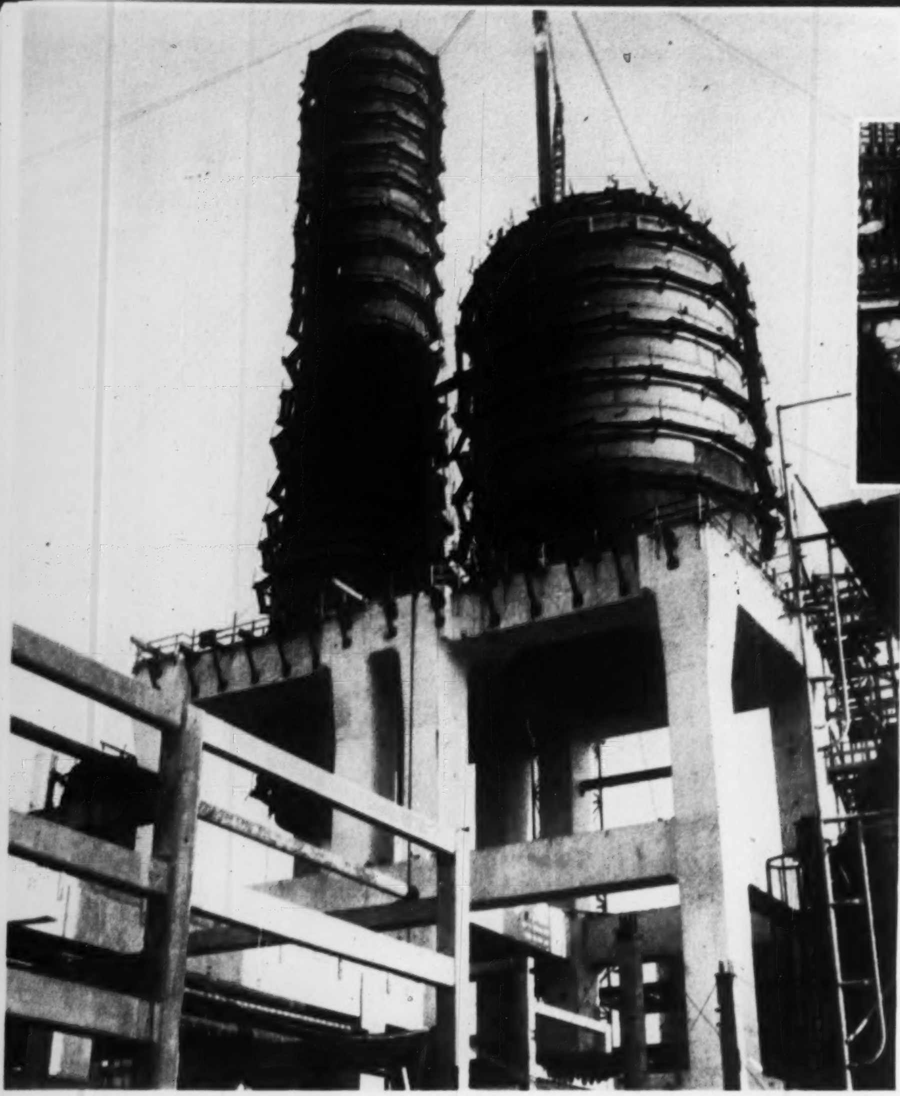
Beth-Cu-Loy culvert sheets conform to the rigid specifications of the American Association of State Highway Officials. You can get additional details about Beth-Cu-Loy, including names of fabricators who use it in the manufacture of drainage pipe, through our nearest sales office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

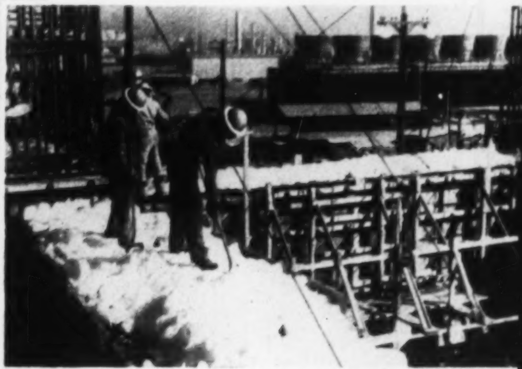
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. ***Export Distributor:*** **Bethlehem Steel Export Corporation**

BETHLEHEM STEEL

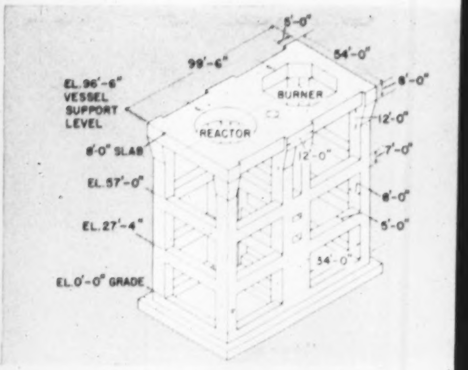
BETHLEHEM
STEEL



Consulting Engineer: Prof. R. E. Davis
Designer and Builder: Bechtel Corporation



ICE BATH—To reduce thermal shrinkage, crushed ice was used for cooling preplaced aggregate and mixing water. Design called for closely spaced reinforcing and special aggregate to get 4000-psi concrete at 60 days.



SPACE FRAME—Mammoth PREPAKT concrete structure supports two heavy pressure vessels, withstands 16,000-ton operating load and 1,400-ton horizontal design thrust.

use of Prepakt concrete simplifies building of massive space frame

Shrinkage Controlled by Preplacing Aggregate and Precooling Materials with Crushed Ice

To assure high quality concrete in a huge, heavily reinforced space frame for the world's largest fluid coker, this structure was built of PREPAKT concrete. This was at Tidewater Oil Co.'s Avon Flying A Refinery, Associated, Calif.

The space frame was designed with 900 tons of reinforcing to provide strength to take the tremendous equipment and earthquake loads. Placing mass concrete among the maze of 2⅛-in. bars during hot summer weather posed problems which could not be solved with conventional concrete—controlling shrinkage; avoiding honeycomb, voids and segregation; and preventing thermal cracking.

These were solved by (1) using the INTRUSION-PREPAKT method of placing concrete, (2) precooling all materials and (3) using dense, low-absorptive aggregate. Tons of crushed ice melted through the preplaced aggregate to chill it before it was consolidated with cold INTRUSION mortar. This cooling plus point-to-point contact of the aggregate minimized shrinkage.

This high-strength space frame was placed in three lifts . . . and demonstrates the remarkable results achieved by INTRUSION-PREPAKT, specialists in concrete construction and maintenance. For information, write: INTRUSION-PREPAKT, Inc., Room 779-P, Union Commerce Bldg., Cleveland 14, Ohio. In Canada: INTRUSION-PREPAKT, Ltd., 159 Bay St., Toronto, Ontario.

INTRUSION-PREPAKT, INC.

OFFICES IN PRINCIPAL U. S. AND FOREIGN CITIES

Intrusion and Prepakt are trade marks of Intrusion-Prepakt, Inc., whose methods and materials are covered by U. S. Patents Nos. 2313110, 2655004, 2434302 and others, also patents pending.

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. FELIX, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

† **Connecticut**—NIKE—BA On Or About 8/21—U. S. Eng., 150 Causeway St., Boston 14, Mass.; storm drainage sys., Nike Battery 73, Bridgeport Defense Area, Westport, ENG—19-016-57-21. Under $10,000. CD 7/16, under LB.

† **Connecticut**—BA 8/22—U. E. Eng., 150 Causeway St., Boston 14, Mass.; imprvt. and maint. dredging in Mystic River and imprvt. dredging in Stonington Harbor, Serial No. CIVENG-19-016-57-15. CD 11/9.

Massachusetts—TENT CAMP—BA 8/23—Commonwealth of Mass., Dpt. Natural Resources, 15 Ashburton Place, Boston; tent camp, Nickerson State Park, Brewster, Proj. 152-56, $120,000. Plans deposit $20, refundable.

BUILDINGS—BA

Conn., Westport—SCHOOL—BA 8/22—Town School Bldg. Comn., Town Hall, constr. Burr Farm Elementary School Long Lots Rd. $750,000. Plans deposit $75. Warren H. Ashley, 967 Farmington Ave., West Hartford, Archt. Marchant & Minges, 107 Farmington Ave., West Hartford, engrs. CD 1/18.

Mass., Bourne—ARMORY—BA 8/23—State, Armory Comn., 905 Commonwealth Ave., Boston, armory, battalion headquarters, $350,000. Plans deposit $50, refundable. William I. Hathon, 711 Boylston St., Boston, archt. CD 6/4, under Mass., Falmouth.

Mass., Lynnfield—SCHOOL—BA 8/23—Town, Charles W. Kessler, chn., School Comn., junior high school addn. rear present bldg. Main St., $600,000. Plans deposit $50 refundabe. Rich & Tucker Assoc., 45 Newbury St., Boston, archts. CD 1/5.

Conn., New Canaan—SCHOOL, etc.—BA 8/28—Town Bd. Educ., c/o Warren Blossom, Town Hall, Junior and Senior High School addns., renovations, $512,000. Plans deposit $50. Sherwood, Mills & Smith, 65 Broad St., Stamford, archts. Werner Jensen Assocs., 641 Summer St., Stamford, structural engrs. CD 2/13.

HEAVY CONSTRUCTION—LB & CA

MAINE—Maine Turnpike Auth., 17 Bishop St., Portland,
H. E. Sargent, Inc., Stillwater, Me. LB **$285,429**, est. $300,000. Contr. 230 paving misc. constr. at four concession areas, Cumberland and Gray, Lewiston and Litchfield. Bids July 26. CD 7/19.

† **J. J. Dunn Co.**, 77 Meadow Brook Rd., Bangor, Me. LB **$82,614**. est. $85,000. instrument landing aircraft approach sys., Dow Air Force Base, IFB 17-601-56-36, Proj. 0051, BANGOR, ME. Base Procurement, Office, Dow Air Force Base, Bangor, Me. Bids July 30. CD 7/25.

F. E. Daddario Corp., 73 Tremont St., Boston, Mass. CA **$109,790**. sea wall at Winthrop Parkway, Revere and Winthrop, MASSACHUSETTS. Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston, Mass. Bids June 7. CD 5/22.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
E. T. O'Neill & Sons Constr. Corp., Box 868, Holyoke, Mass. LB **$844,663**, est. $690,000. Contr. 1, bridge superstructure Rte. 202 over Connecticut River, Holyoke and South Hadley. Bids July 31. CD 7/6.

Bay State Dredging & Contg. Co., 63 Condor St., East Boston, Mass. LB **$235,450**, est. $189,900. dredging New Basin area, Manchester Harbor, Manchester, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids July 31. CD 7/23.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Old Colony Constr. Co. of Quincy, Vernon St., Quincy, Mass. LB **$94,873**, est. $109,226. reconstr. sect. of Washington St., Boston. Bids July 31. CD 7/18.

State, Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. rejected bids July 20, fire protection imprvs., Teacher's College, E-702 Contr. No. 2, FITCHBURG, MASS. LB **$107,935**. Will re-advertise. CD 7/26, under LB.

BUILDINGS—LB & CA

▲ **John Capobianco**, 101 Tremont St., Boston, Mass. CA **$1,939,000**. JUNIOR-SENIOR REGIONAL SCHOOL, ORANGE-ERVING, MASS. Towns Orange and Erving, Ralph C. Mahar, Regional School Dist. Comn., c/o supt., Orange, Mass. CD 7/18, under LB.

N.D.C. Constr. Co., Inc., 124 Shawmut Ave., Boston, Mass. CA Approx. **$100,000**. WAREHOUSE, 410, "E" St., SOUTH BOSTON, MASS. P. & P. Realty Co., 540 "E" St., South Boston, Mass. Linenthal & Becker, 16 Lincoln St., Boston, Mass., engrs.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

N. Y., New York—ELEVATORS—BA 8/24—New York City Transit Auth., 370 Jay St., Brooklyn, Zone 1, furnishing, installing passenger elevators and electrical equip. for 181 St. Station, Broadway-Seventh Ave. Line, IRT Division, N. Y. City Transit System, Manhattan Boro, Contr. E-141.

New York—BA 8/28—The Power Authority of the State of New York, 270 Broadway, New York, Zone 7, furnishing, delivery of carrier current equip. St. Lawrence Power Proj., Spec. No. PA 5-14026, St. Lawrence Contr. P40. Plans deposit $10. Uhl, Hall & Rich, 230 Congress St., Boston 10, Mass., engrs. CD 8/18/54.

† **N. Y., Sunmount**—BA 9/11—Veterans Admin., Munitions Bldg., Wash., D. C., elevated water storage tank No. 48, Veterans Admin. Hospital.

BUILDINGS—BA

▲ **D. C., Wash.**—DWELLINGS—BA 8/16—National Capital Housing Auth., 1729 New York Ave. N.W., Wash., Arthur Capper Dwellings DC-1-20, 612 dwelling units between 2 and 7 Sts. and Va. Ave. and M Sts. S.E. Plans deposit $50. CD 5/11, under LB.

Md., LaPlata—HOUSING—BA 8/22—U. S. Eng., First and Douglas Sts., N.W., Wash., D. C., construct and finance, 12 housing units, Army Receiving Station, (Capehart) Eng. 49-080-57-2-(2). Plans deposit $25. CD 7/18.

HEAVY CONSTRUCTION—LB & CA

Westinghouse Electric Corp., Elevator Div., 9 Rockefeller Plaza, New York 20, N. Y. LB **$120,513**. Passenger Escalators Equipment Contr. E-142 No. 1, Intervale Ave. and 177 St. Stations, White Plains Rd. line I. R. T. Division, Bronx Boro, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids July 27. CD 7/9.

▲ **Felix Buzzi & Son**, 612 S. Main St., Torrington, Conn., CA **$3,080,000**. central OFFICE for State Hy. Dpt. and Hy. Dist. No. 1 WETHERSFIELD, CONN. State P. W.'s, Dpt., 165 Capitol Ave., Hartford, Conn. Bids July 18, awarded Aug. 2. CD 7/20, under LB.

NEW JERSEY—State Hy. Dpt., 1035 Parkway Ave., Trenton,
Union Bldg. & Constr. Corp., 631 Main Ave., Passaic, N. J., LB **$144,803** (5 bidders) pavement wid'n., resurf. 0.76 mi. Route 10 from Pleasant Valley Way to Prospect Ave. Essex Co. Bids July 31. CD 7/10.

Lisbon Constr. Co., 11400 Kemp Mill Rd., Silver Spring, Md. LB **$125,857**. (10 bidders) Edmonston storm drain, from Northeast branch to B & O R.R., Contr. 70-D, HYATTSVILLE, MD. Washington Suburban Sanitary Comn., Hamilton St., Hyattsville, Md. Bids July 30. CD 7/19.

DELAWARE—State Hy. Dpt., Hy. Dpt. Admin. Bldg., Dover,
Del.—**George & Lynch Inc.**, Delaware Trust Bldg., Wilmington, Del, LB **$425,718** wid'n., resurf. 5.6 mi. hy. Contract 1446, Sussex Co.;
Del.—**Interstate Amiesite Co.**, Delaware Trust Bldg., Wilmington, Del., LB **$211,878** furnishing hot mix b. conc. patching, Contract 1528, New Castle Co. Bids Aug. 1. CD 7/26.

Intercounty Constr. Co., 4720 Baltimore Ave., Hyattsville, Md. LB **$190,451**. Contr. 465 S, sewage force main, Back River to Baltimore City Outfall Sewer, TOWSON, MD. Comrs. Baltimore Co., County Office Bldg., Towson, Md. Bids July 25. CD 7/17.

Eastern States Constr. Co., 405 S. duPont Rd., Elsmere, Del., LB **$203,085**, sanitary sewers, Albion and Eastburn Heights, NEW CASTLE, DEL. New Castle County Levy Court, Public Bldg., 11 and King Sts., Wilmington, Del. Bids July 31. CD 7/26.

BUILDINGS—LB & CA

Squirrel Hill Homes, c/o N. M. Obedin Co., 124 Jackson St., Hempstead, N. Y. Owner Builds. **$400,000**. 40 HOUSES on tract on Peters Blvd. east of Bay Shore Rd., BRIGHTWATERS, N. Y.

▲ **Banner Homes**, c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$2,200,000**. 100 HOUSES on tract at E. 52 St. and Ave. U, BROOKLYN, N. Y.

House Fair Homes c/o Trylon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$380,000**. 20 HOUSES on tract at South Bayview Ave. and Meister Blvd., FREEPORT, N. Y.

Acorn Homes, c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$560,000**. 20 HOUSES on tract at Utopia Pkwy. and 21 Ave., WHITESTONE, N. Y.

Alan Homes, c/o Gale-Oppenheimer, 113 W. Sunrise Hy., Freeport, N. Y. Owner Builds. **$440,000**. 20 HOUSES on tract on Woodbury Rd., WOODBURY, N. Y.

Benjamin Bragman, 172 Noyeland St., Woodmere, L. I., Owner Builds, **$750,000**, 24 homes, in Lake Shongun area, 26-acre subdivision, MOUNT FREEDOM, N. J.

Bengar Corp., 195 Broadway, Paterson, N. J., CA, **$650,000**, Martinique APARTMENTS, Passaic Ave., PASSAIC, N. J. Martinique, Inc., 195 Broadway, Paterson, N. J. John J. Baldino, County Bank & Trust Bldg., Passaic, N. J. Nathan Gurtman, 175 Market St., Paterson, N. J and Paul Resnick, 654 Madison Ave., New York, N. Y. archts.

Dick Corp., Rte. 51, Large, Pa. LB **$866,000**. 1 story, 72x380 ft., 1 story, 66x266 ft., Clara Barton Elementary SCHOOL, West Mifflin, PITTSBURGH, PA. School Dist. of West Mifflin, West Mifflin, Pittsburgh, Pa. Bids July 19. CD 6/28.

Trimble Co., 1710 Penna Ave., Pittsburgh, Pa. CA Est. **$200,000**. 1 story, brick, steel WAREHOUSE addn., PITTSBURGH, PA. Williams & Co., 901 Penna Ave., Pittsburgh, Pa.

Harry W. Corbett Co., N. Highland Dr., Pittsburgh 28, Pa. CA Est. **$400,000**. 1 and 2 story, brick, steel parochial SCHOOL, Bethel Twp., PITTSBURGH, PA. St. Thomas More R. C. Congregations, Bethel Twp., Pittsburgh, Pa. School Deeter & Stott, Gateway Center, Pittsburgh, Pa., archts.

F. J. Busse Co., 1575 Noblestown Rd., Pittsburgh, Pa. CA Est. **$350,000**. 3 story, bsmnt., 66x119 ft., 40x119 ft., brick, steel parochial SCHOOL, PITTSBURGH, PA. St. Rosalia R. C. Congregation, Greenfield Ave., Pittsburgh, Pa. Bids June 14. CD 6/15.

▲ **Gamble & Gamble**, Bolivar, Pa. CA **$1,038,970**. 1 and 2 story, brick, block, steel JUNIOR SENIOR HIGH SCHOOL, Jefferson Twp., SAXONBURG, PA. South Butler Co. Joint School Dist., Saxonburg, Pa. CD 7/30, under LB.

General State Auth., 18 and Herr Sts., Harrisburg, Pa. rejected bids June 13, power plant at Institution of Defective Delinquents, WILKES BARRE, PA. LB **$565,565** project dropped; CD 6/15, under LB.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

venting thermal cracking.

These were solved by (1) using the

Intrusion and Prepakt are trade marks of Intrusion-Prepakt, Inc. whose methods and materials are covered by U. S. Patents Nos. 2313110, 2655004, 2434302 and others, also patents pending.

IF IT'S A

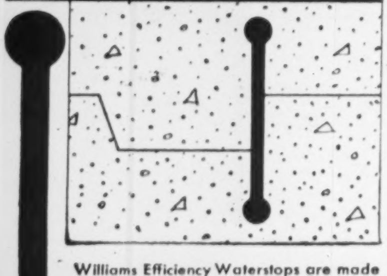
PLAY SAFE! ASK FOR A DEWATERING ANALYSIS BY

GRIFFIN

WELLPOINT CORP.

881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

RUBBER
WATERSTOPS
FOR MASONRY CONSTRUCTION JOINTS



Williams Efficiency Waterstops are made from Natural Rubber Stock, and designed for maximum effectiveness in any type of cast-in-place construction joint. They will bend around corners—will not tear from shear action. Tensile Test: 3990 lbs.; Elongation Test: 650%. Available in rolls up to 80 feet in length. Field splicing is simple. Williams Waterstops can also be furnished in Neoprene for industrial uses where resistance to oil and other injurious wastes is desirable. These highly effective Waterstops are now in use in hundreds of industrial plants, commercial and public buildings throughout the country.

See Sweet's, or Write for Information.

WILLIAMS
EQUIPMENT and SUPPLY CO.
16651 Baylis Ave., Detroit 21, Mich.

P. **Frederick Obrecht Co.**, 4101 E. Monument St., Baltimore 5, Md. CA **$150,000.** 1 story, 150x205x21 ft., brick, masonry steel WAREHOUSE, 6500 Quad Ave., BALTIMORE, MD. General Electric Co., Appliance Park, Louisville, Ky. T. Harrison, c/o owner, engr. CD 2/19/53.

▲ **Community Builders, Inc.**, 8605 Cameron St., Silver Spring, Md. Owner Builds. Est. **$5,824,000.** 364 HOUSES at Connecticut Ave. and Viers Mill Rd., SILVER SPRING, MD. Philip Mason, 8605 Cameron St., Silver Spring, Md., archt. (correction-archt.) CD 7/24, under CA.

▲ **Hegeman-Harris Co. Inc.**, 30 Rockefeller Plaza, New York, N. Y., CA Est. **$5,000,000-$6,000,000.** First block of Area B, redevelopment residential section, 400-unit-elevator APARTMENT BLDGS. and 80 town HOUSES, WASH., D. C. First National Capital Redevelopment Corp., 730 Jackson Pl. N. W., Wash., D. C. Satterlee & Smith, 3 Dupont Circle N. W., Wash, D. C., archts. Work to start in Spring.

SOUTH

HEAVY CONSTRUCTION—BA

Fla., West Palm Beach—BA 8/27—City, City Hall, Contract 6, 38,100 lin. ft. 8 to 24-in. sanitary sewers, manholes, appurtenances etc., and sewage pumping stations; 4 pre-fab. steel underground pumping stations, 1 pneumatic ejector lift station, 1 masonry pumping station, 10,900 lin. ft. force main appurtenances. Plans deposit $25 each. Robert & Co. Assoc., 96 Poplar St. N. W., Atlanta, Ga., engrs.-archts. CD 1/14/54.

Fla., West Palm Beach—BA 8/28— City, City Hall, Contract No. 7, 36,100 lin. ft. 8- to 24-in. sanitary sewers and pumping station; contract 8, 22,200 lin. ft. 8- to 30-in senitary sewers and pumping stations. Plans deposit $25. Robert Co. Assocs., 96 Poplar St. N. W., Atlanta, Ga., engrs.-archts. CD 1/14/54.

† **Mississippi**—BA 8/28—U. S. Eng., P.O. Box 97, Memphis 1, Tenn., levee work Levee Item No. L-653, Moon Lake, approx. levee station 61/0 to 64/9, Upper Yazoo Levee District, along Mississippi River levee, Coahoma Co., CIVENG-40-041-57-15.

BUILDINGS—BA

▲ **Va., Fort Belvoir**—HOUSING—BA 8/23—U. S. **Eng.,** First and Douglas Sts. N. W., Wash. 25, **D. C.** construct and finance 618-family housing units, Eng-49-080-57-3 (3). CD 7/10.

La., Alexandria—HOUSING—BA 8/28—Contg. Officer, England Air Force Base, Alexandria, construct and finance, 300 housing units, (Capehart), England Air Force Base, Eng. 16-600-57-4. CD 7/31.

N. C., Wilson—SCHOOLS—BA 9/6—City, 113,300 sq. ft. Wilson Senior High School, 53,400 sq. ft. Chas. H. Darden School addn., 19,923 sq. ft. Adams School addn., 4,170 sq. ft. Elvie School addn. Plans deposit $50 each school. Wm. Henley Deitrick, 115 W. Morgan St., Raleigh, archt.

BUILDINGS—SLC

Ky., Louisville—MILL—Ralston Purina Co., 838 S. 8 St., St. Louis, Mo., soon lets contract, feed mill, warehouse, office, $500,000. Neal Campbell, 1119 Locust St., St. Louis, Mo., engr.

HEAVY CONSTRUCTION—LB & CA

VIRGINIA—Richmond-Petersburg Turnpike Auth., 1015 E. Main St., Richmond,

Blythe Bros. Co., P. O. Box 989, Charlotte, N. C., LB **$903,663.** (4 bidders) Contract E-1-G, Section E Appomattox River crossing, grading, drainage, paving and structures approx. 2010 ft. from Bollingbrook St. to north bank of Appomattox River, City of Petersburg. Bids July 31. CD 7/10.

▲ **NORTH CAROLINA**—State Hy. & Pub. Wks. Comn., Raleigh,

N. C.—**Jesse M. Coble,** Box 664, Greensboro, N. C. LB **$94,589.**, est. $75,000-$100,000. structures for 7.62 mi. wid'n., N. C. 350 from east city limits of Aulander, northeast to Aheskie, Proj. 1479, S 820 (1), Bertie and Hartford Counties;

N. C.—**Dickerson, Inc.**, Monroe, N. C. LB **$239,066.** est. $225,000-$250,000, structures for 8.63 mi., U. S. 301 from a point 2.2 mi. north of Wilson city limits north to south end of Rocky Mount by-pass, Proj. 1999, F 117 (7), F 188 (6), Wilson and Nash Counties; LB **$189,291,** est. $200,000-$225,000. structures for 4.491 mi. from point on Avondale Ave. in Charlotte, 72 ft. south of Brookside Ave., south along Avondale Ave. and Park Rd. to city limits, south along or near existing road to Sharon Rd., from a point in Woodlawn Rd. 124 ft. east of Sta. 99 plus 80, on above part, east approx. 0.4 mi. to a point in Brandywine Rd., Proj. 7-209, S 889 (1), Code 5900-1003, B. S. 10-7-67-25, Mecklenburg Co.; LB **$148,242,** est. $150,000-$175,000. structures on 6.54 mi., from structure over U. S. 21 approx. 0.5 mi. south of Brooks Cross Rd. east across country and crossing U. S. 601 to point 1 mi. south of Yadkinville, Proj. 7941, F 172 (2), Yadkin Co.; LB **$87,639,** est. $75,000-$100,000 bridge and approaches 0.18 mi., to and over Southern Ry. in Forest City, on U. S. 221-A, Proj. 8824, S 298 (1), Rutherford Co.;

N. C.—**Clinchfield Conc. Co., Inc.**, 1704 Efland Dr., Greensboro, N. C. LB **$208,688,** est. $200,000-$225,000. structure on 9.84 mi., relocation of N. C. 86 from Yanceyville to Virginia State Line, Proj. 5141 F 112 (3), Caswell Co. Bids July 31. CD 7/25.

▲ **NORTH CAROLINA**—State Hy. & Pub. Wks., Comn., Raleigh,

N. C.—Ballenger Paving Co., Box 927, Greenville, S. C. LB **$273,534,** est. $200,000-$225,000. subgrade c. conc. 7.62 mi. wid'n. N. C. 350 from east city limits of Aulander, northeast to Aheskie, Proj. 1479, S 820 (1), Bertie and Hertford Counties

N. C.—Dickerson, Inc., Monroe, N. C. LB **$246,361,** est. $300,000-$400,000. grading 8.63 mi. U. S. 301 from point 2.2 mi. north of Wilson City limits, north to south end of Rocky mount by-pass, Proj. 1999, F 117 (7) F 188 (6), Wilson and Nash Counties;

N. C.—Barrus Constr. Co., Box 395, Kinston, N. C. LB **$115,936,** est. $100,000-$125,000. subgrade, CABC bit. con. 2.11 mi. from point on U. S. 70, 1,400 ft. west of White Owl, southwest to a point on N. C. 11 and 55 southwest of Kinston, (Kinston-By-Pass), Proj. 2569, S 791 (2), Lenoir Co.;

N. C.—F. D. Cline Paving Co., Box 349, Raleigh, N. C. LB **$343,378,** est. $300,000-$4,00,000. STBC, sheet asph. base, 11.68 mi. U. S. 421 from point approx. 1,700 ft. southeast of Harnett Co. line, southeast to point approx. 12 mi. northwest of Clinton, Proj. 2713, F 68 (3), Sampson Co.; LB **$393,540,** est. $400,000-$500,000, fine grading, STBC and bit. con. 5.34 mi., surf. on S. P. 5693 from a point on U. S. 1, 2 mi. northeast of Aberdeen, northeast through Southern Pines to a point on U. S. 1, 3 mi. southwest of Lakeview, Proj. 5694, F 232 (6), B. S. 8-7-56-59, Moore Co.;

N. C.—E. B. Towles Constr. Co., Box 1617, Wilmington, N. C. LB **$456,210,** est. $400,000-$500,000, sheet asph. base 12.1 mi. wid'n., relocation U. S. 701 from point 1.5 mi. south of Clarkton to a point 0.2 mi. south city limits of Elizabethtown, Proj. 3084, SF-255 (6), B. S. 6-6-42-152, Columbus and Bladen Counties. LB **$82,625,** est. $75,000-$100,000. b. conc. surf. 13.1 mi., N. C. 211 from its jct. with U. S. 701 in Clarkton to Robeson Co. line, B. S. 6-6-42-154, Code 5900-603, Code 5900-609, Bladen Co.;

N. C.—Thompson-Arthur Paving Co., Box 1197, Greensboro, N. C. LB **$86,481,** est. $75,000-$100,000. b. conc. binder and surf. 5.8 mi., surfacing County road from U. S. 29A and 70A in Jamestown, north to U. S. 421 at Guilford College Station, Proj. B. S. 7-7-49-40 Guilford Co.;

N. C.—Midstate Contractors, Inc., Box 2401, Hickory, N. C. LB **$84,408,** est. $75,000-$100,000. b. conc. binder surf. 6.94 mi., resurf. N. C. 87 from end curb and gutter in Leaksville, northeast to Virginia State Line, N. C. 700 from end curb and gutter in Spray, south and east to Meadow Summit, sect. of N. C. 770 between Meadow Summit and Draper, 0.5 mi. long, Proj. B. S. 7-6-51-113, B. S. 7-6-51-114, Rockingham Co.;

N. C.—Brown Paving Co., Box 484, Lexington, N. C. LB **$160,328,** est. $150,000-$750,000. b. conc. binder surf. Class H and I 13.33 mi. resurf. U. S. 1 from its jct. with U. S. 15 and 501 south of Sanford, north to point, 4,500 ft. north of jct. with U. S. 15 and 501 north of Sanford, also U. S. 421 in Sanford, Proj. B. S. 8-6-54-127, Code 5900-837, Lee Co.;

N. C.—J. F. Cleckley & Co., Orangeburg S. C. LB **$206,714,** est. $175,000-$200,000. STBC, sheet asph. surf. b. conc. 2.52 mi. from point approx. 5 mi. west of Lumberton, east paralleling or near U. S. 301 approx. 2 mi. also grade separation on U. S. 74 near beginning of first part, Proj. 3975, IN 594 (8), Robeson Co.;

N. C.—A. B. Burton Co., Inc., Box 817, Lynchburg, Va. LB **$462,532,** est. $400,000-$500,000. grading 9.84 mi. relocation N. C. 86 from Yanceyville to Virginia State Line, Proj. 5141, F 112 (3), Caswell Co.

N. C.—Blythe Bros. Co., Box 989, Charlotte, N. C. LB **$617,330,** est. $400,000-$500,000. SABC, b. conc. 4.91 mi. from a point on Avondale Ave. in Charlotte, 72 ft. south of Brookside Ave., south along Avondale Ave. and Park R. to city limits, south along or near existing road to Sharon Rd., from a point in Woodlawn Rd. 124 ft. east of Sta. 99 plus 80 on above part, east approx. 0.4 mi. to a point in Brandywine Rd., Proj. 7-209, S 889 (1), Code 5900-1003, B. S. 10-7-67-25, Mecklenburg Co.

N. C.—**Reynolds & Tutterow Constr. Co.**, Mocksville, N. C. LB **$251,668,** est. $250,000-$300,000. grading 6.54 mi. from structure over U. S. 21 approx. 0.5 mi. south of Brooks Cross Rd. east across country and crossing U. S. 601 to a point 1 mi. south of Yadkinville, Proj. 7941, F 172 (2), Yadkin Co.;

N. C.—L. A. Reynolds & Co., Inc., 1100 W. First St., Winston-Salem, N. C. LB **$235,348,** set. $250,000-$300,000. grading, CABC, b. surf. tr. 4.15 mi., from intersection of N. C. 26 and Blue Ridge parkway at Gillespie Gap, north along or near N. C. 26 to a point on N. C. 26 just inside the city limits of Spruce Pine, Proj. 8573, S 360 (1), Mitchell Co.;

N. C.—B. G. Young & Son, Johnson City, Tenn. LB **$241,532,** est. $250,000-$300,000. CABC, b. surf. tr. 3.56 mi., relocation of N. C. 28 from a point near its jct. with county road northeast of Steceah, east through Steceah 3.56 mi., Proj. 9340, S 839 (1), Graham Co. Bids July 31; CD 7/25.

† **Thompson & Street Co.**, 505 Builders Bldg., Charlotte, N. C. LB **$365,128.** sewage treatment plant, Missile Plant, CHARLOTTE, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Charlotte Engineers, Inc., 330½ N. Tryon St., Charlotte, N. C., engr. CD 10/15/54, under Public Buildings.

† **U. S. Eng.**, 308 Customhouse, Wilmington, N. C. rejected bids June 27, storm drainage, outfall ditch and culverts, ENG-31-075-57-3, FORT BRAGG, N. C. LB **$87,850.** Will re-advertise. CD 6/13.

O. O. **Walker,** Kings Mountain, N. C. LB **$163,870.** water line extens.; sewer line extens., HIGH POINT, N. C. City, Mayor G. A. Covington, High Point, N. C. Wm. F. Freeman, Inc., High Point, N. C., engrs.

Connell Constr. Co., Warrenton, N. C. LB **$44,233** c.i. pipe, LB **$44,044** cement asbestos pipe, water distr. sys., well pump station imprvs., SEVERN, N. C. Town, Severn, N. C. R. Stuart Royer & Assoc., 15 W. Cary St., Richmond, Va., engrs.

Wanamaker & Wells, Inc., Orangeburg, S. C. LB **$118,470.** sanitary sewer outfall, WILMINGTON, N. C. City, City Hall, Wilmington, N. C. Bids July 25. CD 7/13.

Ray D. Lowder, Inc., Albemarle, N. C. LB **$630,118.** sewage outfall and pumping station, WILSON, N. C. City, Wilson, N. C. Bids July 24. CD 7/13.

† **Ruscon Constr. Co.,** 149 E. Bay St., Charleston, S. C., CA, **$758,341.** ordnance facilities, U. S. Naval Air Station, Cecil Field, NAVDOCKS, Spec. No. 4998/56, JACKSONVILLE, FLA. P. Wks. Office, Dpt. Navy, Naval Base, S. C. Bids July 18. CD 7/26, under LB.

† **Valley Constr. Co.,** 732 7 St., Columbus, Ga., LB **$381,044.** dining hall, Brookley Air Force Base, MOBILE, ALA. U. S. Eng., 2301 Grant St., Mobile 7, Ala. Bids July 24.

† **Markman & Brown Co.,** 1961 N. Industrial Blvd., Dallas, Tex. LB **$189,580** (5 bidders) standard board revetment, Red River, consisting 75,000 cu. yd. grading, Bossier Parish, Inv. 56-299, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La.

Austin Bridge Co., Box 746, Baton Rouge, La. LB **$315,870.** (2 bidders) Viaduct and other imprvs., on Murphy St. from Winston to Fairfield Ave., SHREVEPORT, LA. City, City Hall, Shreveport, La. Bids July 31. CD 7/24.

BUILDINGS—LB & CA

▲ **Taylor Constr. Co.,** 2875 N. LeJeune Rd., Miami, Fla., LB **$3,500,000.** Beau Rivage HOTEL, Collins Ave. and 99 St., BAL HARBOR VILLAGE, FLA. Harry Dinnerstein, 6401 N. Bay Rd., Miami Beach, Fla. Bids July 30. CD 7/26.

A. C. Samford, Inc., Box 1229, Albany, Ga., LB **$674,200.** Proj. 444, HOSPITAL for Colored Patients, CHATTAHOOCHEE, FLA. Bd. Comrs. of State Institutions, State Capitol, Tallahassee, Fla. Bids July 26. CD 7/6.

Florida State Bd. Control, Education Bldg., Florida State University, Tallahassee, Fla., rejected bids July 17, first unit, OFFICE and RESEARCH BLDG., Fla. Geological Survey, Florida State University, TALLAHASSEE, FLA. LB **$397,163.** CD 8/2, under LB.

Bartley, Inc., 433 Gravier St., New Orleans, La. LB **$538,300.** (5 bidders) 1 story, rein.-con. 40,000 sq. ft. brick Henderson H. Dunn Elementary SCHOOL Site No. 2 La. 114, NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondelet St., New Orleans, La. Bids July 26. CD 7/11.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

† **Illinois**—BA 8/22—U. S. Eng., 420 Locust St., St. Louis, Mo. highway closure structure East St. Louis and vicinity (East Side Levee Sanitary Dist.) Madison and St. Clair Counties, Proj. ITEM IV-E, CIVENG-23-065-57-10. CD 7/30.

† **Ill., Scott Air Force Base**—CATHODIC PROTECTION SYSTEMS—BA 8/28—U. S. Eng., 475 Merchandise Mart, Chicago, Zone 54, cathodic protection systems for water, steam, avgas and jet fuel, Scott Air Force Base, Serial No. ENG. 11-032-57-9. CD 6/29/51.

† **Indiana**—AAA—BA 8/30—U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill., Special AAA and related work, Site C-32, Porter Co., Serial No. ENG-11-032-57-2. CD 7/27.

† **O., Mansfield**—APRON PAVEMENT—BA On Or About 8/30—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., apron pavement repair, Air National Guard area, Mansfield Municipal Airport, ENG-46-022-57-6.

▲ **Mich., Van Dyke**—BA 10/1—Charter Twp., of Warren, Macomb Co., Twp. Hall, 22720 Van Dyke Ave., Van Dyke, 24 M. G. D. sewage treatment plant, incl. service bldg. (with pumping station), filter-dryer bldg., garage, chlorine bldg., grit chambers, primary settling tanks, aeration tanks, final settling tanks, and chlorine contract chamber, also incl. concrete road, earthwork, etc. Plans deposit $100, Johnson & Anderson, Inc., 1307 Pontiac State Bank Bldg., Pontiac, consult. engr. adv ENR 8/16. CD 9/28/55.

BUILDINGS—BA

▲ **O., Marion**—DORMITORY, etc.—BA 8/24—Ohio State Dpt. Pub. Wks., Columbus, dormitory, guard towers, engine room, Marion Correction Institution for Ohio State Div. of Mental Health & Welfare, $1,400,000. Plans deposit $25 per bldg.; $75 for all. Ward & Conrad, Hanna Bldg., Cleveland, Zone 14, archts. CD 3/7/56.

Mich., **Garden City**—SCHOOLS—BA 8/28—City, Pub. Schools, 29128 Dover St., 35,000 sq. ft. Burger Junior High School Addn. No. 3; 8,000 sq. ft. South Junior High School Addn. No. 2. Plans deposit $20 each proj. W. T. Anicka & Assoc., 2300 Washtenaw St., Ann Arbor, archts. CD 12/19.

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Mich., Garden City—SCHOOLS—BA 8/28—City, Pub. Schools, William Fischer, secy. Bd. Educ., 29128 Dover St., 13,500 sq. ft. Burger Junior High School Addn. No. 2, 17,750 sq. ft. South Junior High School Addn. No. 1. Plans deposit $20 each proj. W. T. Anicka & Assoc., 2300 Washtenaw St., Ann Arbor, archts. CD 12/19.

Ill., Fort Sheridan—HOUSING—BA 8/31—U. S. Eng., 475 Merchandise Mart, Chicago, Zone 54, Construct and Finance 150-units family housing. CD 7/31.

† **O., Mansfield**—TRAINING CENTER—BA On Or About 9/12—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., army reserve training center, ENG-46-022-57-7.

Mich., Ann Arbor—THEATER—Bids Asked—W. S. Butterfield Theaters, Inc., 1492 National Bank Bldg., Detroit, Zone 26, (selected list bidders), campus theater, Crane, Kiehler & Kellogg, 112 Madison St., Detroit, archts.

BUILDINGS—SLC

Mich., Alma—CHURCH—Office James Morison, archt., 713 Fox Theater Bldg., soon lets contract, church, for First Presbyterian Church, Alma, Mich. $350,000.

Mich., Midland—SERVICE BLDG.—Consumers Power Co., Dan E. Karn, pres., Jackson, soon lets contract service bldg. $150,000. Alden B. Dow, 315 Post St., Midland, archt.

HEAVY CONSTRUCTION—LB & CA

ILLINOIS—State Div. Hy., Springfield,
Ill.—**J. P. Hollerich Co.**, La Salle, Ill., LB **$109,903.** bit. resurf. 8.95 mi. various routes Bureau, Henry and Lee Counties;
Ill.—**Whetzel Constr. Co.**, Champaign, Ill., LB **$112,387,** resurf. U. S. 150, Rt. 47, Rt. 43 US 36 and US 136, Champaign, Edgar, Douglas and Vermilion Counties;
Ill.—**Arcole Midwest Corp.**, 3225 Main St., Skokie, Ill., LB **$104,846,** resurf. 1.54 mi. Cicero Ave., Cook Co.;
Ill.—**American Asphalt Paving Co.**, 9701 S. Torrence St., Chicago, Ill., LB **$185,374.** c. conc. resurf. 1.78 mi. 95 St., Cook Co.;
Ill.—**Gunther Constr. Co.**, Galesburg, Ill., LB **$185,730.** c. conc. patching, resurf. 3.53 mi. McDonough, Fulton and Hancock Counties;
Ill.—**Maclair Asphalt Co. & Bituminous Fuel Oil Co.**, 6300 Collinsville St., East St. Louis, Ill., LB **$385,570.** c. conc. resurf. 5.28 mi. Main St., St. Clair Co. Bids July 31. CD 7/23.

† **U. S. Eng.**, 475 Merchandise Mart, Chicago 54, Ill. cancelled bids to have been opened Aug. 24, ammunition storage facilities, Truax Field, ENG-11-032-57-13, MADISON, WIS. CD 7/31.

Great Lakes Dredge & Dock Co., 740 N. Plankington Ave., Milwaukee 3, Wis., LB **$88,192** (2 bidders) dock wall at Holtom Canal, MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids July 31. E. A. Schmidt, Milwaukee, Wis., city engr.

▲ **Luedtke Engineering Co.**, Frankfort, Mich. and **Walter Toebe & Co.**, 412 W. Gier St., Lansing, Mich. CA **$1,622,571,** est. $1,400,000. Tenth Street Bridge, PORT HURON, MICH. City, M. B. McMurray, comr., Port Huron, Mich. Bids May 25. CD 5/7.

BUILDINGS—LB & CA

Harry M. Huston, 2440 Glenridge St., Cleveland 17, O. CA Est. **$500,000.** MOTEL, 3 stories in front, 2 in rear, Lee Rd. and Euclid Ave., EAST CLEVELAND, O. Albert Luxenburg & Sons, Inc., 14673 Euclid Ave., Cleveland 12, O. Bruce Huston & Assoc., 4135 Erie St., Willoughby, O., archts.

▲ **F. A. Wilhelm**, 3914 Prospect St., Indiannapolis, Ind., CA **$2,000,000** general contract 9-story 208-patient HOSPITAL WING west side of hospital building, INDIANAPOLIS, IND. Methodist Hospital, 16 and Capitol Ave., Indianapoils, Ind. Bids June 12, awarded Aug. 1;
Freyn Brothers Co., 1028 N. Illinois St., Indianapolis, Ind., CA **$1,500,000.** plumbing work (Indianapolis, Ind.)
Flagg Electric Co., 115 N. Penn. St., Indianapolis, Ind., CA **$500,000.** electrical work (Indianapolis, Ind.)

▲ **Practical Home Builders, Inc.**, 13440 West Seven Mile Rd., Detroit, Mich. Owner Builds. **$1,264,000.** 92 brick HOMES, Shanandoah, Langley Sts., CLAWSON, MICH.

▲ **Miller Davis Co.**, 1029 Portage St., Kalamazoo, Mich. CA Est. **$2,000,000.** PLANT addn., Mossel Ave., KALAMAZOO, MICH. Fuller Mfg. Co., E. L. Ludnigsen, Pres., Kalamazoo, Mich. CD 7/26.

Darin & Armstrong, 2041 Fenkel St., Detroit, Mich. LB **$869,000.** (8 bidders) 1 story, 112,000 sq. ft. steel FOOD DISTRIBUTION CENTER, LIVONIA, MICH. Kroger Co., 1240 State St., Cincinnati, O. Bids July 19. CD 7/5.

Douglas Co., Ferndale, Mich. and G. S. Homes, Inc., 223 Bloomfield St., Royal Oak, Mich. CA Est. **$547,800** 39 brick HOMES, Bloomfield and Montrose Sts., ROYAL OAK, MICH. G. S. Homes, Inc., Bloomfield St., Royal Oak, Mich.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

Iowa, Mount Ayr—BA 8/22—Town, sewage treatment plant, incl. accessories, appurtenances. $73,000. Delay Consulting Engineers, Creston, engrs.

† **Arkansas**—BA 9/5—U. S. Eng., P. O. Box 97, Memphis 1, Tenn., levee constr., incl. riverside enlargement and roadway embankment Levee Item No. WR-L-64, Wabash; exten. corrugated metal culvert; riverside enlargement, roadway embankment and artificial berm, Levee Item No. WR-L-62, in White River Drainage Dist., Phillips and Desha Counties, CIVENG-40-041-57-16. CD 12/24/43.

† **N. M., Albuquerque**—ADDNL. FACILITIES—BA About 9/13—U. S. Eng., P.O. Box 1538, addnl. facilities incl. weather vestibules, bldgs., fire alarm system, West Mesa, Eng. 29-005-57-19.

BUILDINGS—BA

Kan., Lindsborg—GALLERY—BA 8/22—Birger Sandzen Memorial Foundation, c/o Bethany College, Lindsborg, Birger Sandzen Memorial Gallery on campus of Bethany College, $400,000. Robert Wehril, Casper, Wyo., archt.

▲ **Mo., Normandy (St. Louis 21 P.O.)**—SCHOOL—BA 8/29—Normandy School Dist., Bd. Educ., Ward E. Barnes, supt. Schools, 7837 Natural Bridge Rd., Zone 21, 3 story brick, concrete, steel senior high school, St. Charles Rock and Lucas and Hunt Rds., $1,964,800. Kenneth E. Wischmeyer, Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, archt. CD 7/25/56.

▲ **Colo., Denver**—BANK ADDN.—BA 9/6—Federal Reserve Bank of Kansas City, 1111 17 St., (selected list of bidders) 3 story, bsmnt., 68x125 Ft., bank bldg. addition. $1,500,000. T. H. Buell & Co., 730 14 St., archt.-engrs. CD 1/18/55.

Minn., Robbinsdale—SCHOOL—BA 9/6—Bd. Educ., H. C. Mickelson, clk., elementary school at Medicine Lake Rd. west of Douglas Dr. $800,000. Bissell & Belair, 1111 Nicollet Ave., Minneapolis, archts. CD 7/18.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,
Minn.—**Mathy Constr. Co.**, 524 Main St., LaCrosse, Wis. LB **$143,021.** (8 bidders) plant mixed bit. surf. 12.8 mi. between Northfield and Farmington, Dakota and Rice Counties;
Minn.—**Barton Contg. Co.**, 3115 Hennepin Ave., Minneapolis, Minn. LB **$89,528.** (2 bidders) grav. base, plant-mixed bit. surf. 3.5 mi. between St. Michael and between St. Michael and T.H. 152, Wright Co.;
Minn.—**Duninick Bros. & Gilchrist**, Olivia, Minn. LB **$144,864** (11 bidders) grav. base, plant-mixed bit. surf. 12 mi. between Jct. TH 12, east of Grove City in TH 55, Meeker Co.;
Minn.—**Ulland Bros.**, 2126 Water St., Duluth, Minn. LB **$122,362.** (4 bidders) grav. base, plant-mixed bit. surf. 7.5 mi. in Keewatin and between Bovey and Calumet, Itasca Co.;
Minn.—**J. S. Pukrop & R. E. Munns**, Ivanhoe, Minn. LB **$73,245.** (8 bidders) grading 2.4 mi. north and east of Slayton, Murray Co.; LB **$144,603** (13 bidders) grade, bridge 5.2 mi. between TH 14 and Russell, Lyon Co.;
Minn.—**Megarry Bros.**, St. Cloud, Minn. LB **$469,520.** (6 bidders) grav., plant-mixed bit. surf. 14.8 mi. between, 1.3 mi. west of Albany and St. Joseph, Stearns Co.;
Minn.—**Morse Bros. & Assoc., Inc.**, 12½ S. W. 1 St., Rochester, Minn. LB **$278,298.** (6 bidders) grading 3.5 mi. east of Chatfield and north of Troy, Olmsted and Winona Counties. Bids July 27. CD 7/12.

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,
Swingen Constr. Co., Box 624, Grand Forks, N. D. LB **$140,861** (3 bidders) bridge No. 9070, over Thief River and approaches, Pennington Co. Bids July 27. CD 7/12.

† **Bureau P. Rds.**, Dpt. Commerce, 214 Globe Bldg., Fourth and Cedar Sts., St. Paul, Minn., rejected bids July 27, grading, draining, bit. stabilized base course, 14.974 mi., on Cuba-Blackduck Rd., Chippewa National Forest, Proj. 3-B3, A1, MINNESOTA. CD 8/3, under LB.

P. Lametti Constr. Co., 615 Drake St., St. Paul, Minn. LB **$95,831** (6 bidders) furnish, install sewers in Sewer Imprv. No. 1956-34, BROOKLYN CENTER, MINN. Village, H. R. Jones, clk., Brooklyn Center, Minn. Bids July 31. CD 7/16.

City, P. A. Cook, clk., Moorhead, Minn., rejected bids July 17, furnish materials, install storm sewers, MOORHEAD, MINN. LB **$358,405.** CD 7/26, under LB.

† **Massman Constr. Co.**, 3917 Broadway, Kansas City, Mo. LB **$346,575,** est. $286,365. constr., repair approx. 22,200 lin. ft. pile dike and revetment Weldon Springs to Amazon Bends, Mile 43.5 to 0.0, Spec. 57-4, MISSOURI. U. S. Eng., Federal Office Bldg., Kansas City, Mo. Bids July 31. CD 5/25/44.

▲ **NORTH DAKOTA**—State Hy. Dpt., Bismarck,
N. D.—**P. A. Bradbury Constr. Co.**, Aberdeen, S. D. LB **$498,985.** base, b. conc. surf. 11.156 mi. Proj. F 70 (7) and F 146 (6), Nelson Co.;
N. D.—**Northern Improvement Co.**, 633 First Ave. N., Fargo, N. D. LB **$1,021,153.** base, c. conc. surf. 3.641 mi. Proj. F 137 (35), U 137 (34), Cass Co.;
N. D.—**John J. Mayo**, d/b/a, Joe Mayo & Son, Cavalier, N. D., and **John Diesetli**, Fergus Falls, N. D. LB **$384,310** grav. surf. 16.312 mi. Proj. S 338 (17), Pembina Co.;
N. D.—**W. H. Noel Co.**, Jamestown, N. D. and **Wm. Collins & Sons**, 606 Black Bldg., N. D. LB **$734,997.** bit. tr. base, structure 21.79 mi. Proj. S 393 (13), McHenry Co.;
N. D.—**Kenneth Hulstrand**, Lakota, N. D. LB **$74,813.** grav. surf. 29.378 mi. Proj. SAP 299 and SAP 390, Bottineau Co. Bids July 27. CD 7/12.

Meisner-Anderson, Bismarck, N. D. CA **$99,599.** general constr., swimming pool, BISMARCK, N. D. City, Bismarck, N. D. Bids July 20. CD 7/12.

Sornsin Constr. Co., 116 Roberts St., Fargo, N. D. CA **$116,982.** water mains, FARGO, N. D. City, Fargo, N. D. Bids July 17. CD 2/18/54.

J. A. Shaw Constr. Co., 633 First Ave. N., Fargo, N. D. CA **$138,428.** sanitary sewers, FARGO, N. D. City, Fargo, N. D. Bids July 17.

Rue Constr. Co., Bismarck, N. D. LB **$159,954.** storm sewer, GRAFTON, N. D. City, Grafton, N. D. L. Richmond, 919 N. 6 St., Grand Forks, N. D., engr. Bids July 9.

OKLAHOMA—Oklahoma Turnpike Auth., 400 N. Walnut St., Oklahoma City,
Federal Sign & Signal Corp., 8700 S. State St., Chicago, Ill. CA **$121,000.** est. $128,000. directional signs for Will Rogers Turnpike, Clarence, Rogers Co. Bids July 31. CD 7/12.

M. A. Swatek & Co., 1137 N.W. Second St., Oklahoma City 3, Okla. CA **$274,806,** est. $275,000. 10,000 lin. ft. 30-in. c.i. water mains, OKLAHOMA CITY, OKLA. City, City Hall, Oklahoma City, Okla. Bids July 31. CD 7/25.

† **Vilbig Constr. Co.**, 2026 Singleton Blvd., Dallas, Tex., LB **$68,474,** est. $70,819. flood water retarding structures with earthfill embankments, etc. Site 6-K-2 and 6-L, Elm Fork Trinity River, approx. 7 mi. s.w. of Muenster, Cooke Co., TEXAS. Soil Conservation Service, First Natl. Bank Bldg., Temple, Tex. Bids July 25. CD 7/9.

TEXAS—State Hy. Comn., Austin,
cancelled bids to have been opened Aug. 14, grading, structures, flex. base, one crs. surf. 7.659 mi. Hy. US 84, Proj. F-366 (3), Hockley Co. CD 7/25.

T. K. Irwin and Ralph B. Leonard & Assocs., Merc. Commerce Bldg., Dallas, Tex., Own Forces, **$85,000.** hard-paved auto parking center, DUNCANVILLE, TEX.

T. E. Irwin and Ralph B. Leonard & Assocs., Merc. Commerce Bldg., Dallas, Tex. Own Forces, **$48,100.** bldg. site area earthwork, filling, grading, DUNCANVILLE, TEX. Geo. L. Dahl, 2101 N. St. Paul St., Dallas, Tex., archt.

T. E. Irwin and Ralph B. Leonard & Assocs., Merc. Commerce Bldg., Dallas, Tex. Own Forces, **$90,000.** sewers, DUNCANVILLE, TEX. Geo. L. Dahl, 2101 N. St. Paul St., Dallas, Tex., archt.

† **Friedman Constr. Co.**, 1510 W. 10 St., Fort Worth, Tex., CA **$645,007,** 2 airmens dormitories, Carswell Air Force Base, ENG-41-443-56-95, FORT WORTH, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids July 30. CD 7/13.

Builtrite Homes, 4137 Reed Rd., Houston, Tex., Owner Builds, **$46,675.** c.i. water lines, facilities, HOUSTON, TEX.

Builtrite Homes, 4137 Reed Rd., Houston, Tex., Owner Builds, **$75,000.** sanitary sewers; **$75,000.** storm sewers, HOUSTON, TEX. CD 7/6.

Builtrite Homes, 4137 Reed Rd., Houston, Tex., Owner Builds, **$75,000.** hard-paved streets, HOUSTON, TEX.

John Baldwin, c/o Braeburn Glen Subdivision, 3218 Roland St., Houston, Tex., Purchase and Hire **$75,000.** sanitary sewers; **$75,000.** storm sewers, HOUSTON, TEX. CD 7/26.

John Baldwin, c/o Braeburn Glen Subdivision, 3218 Roland St., Houston, Tex., Purchase and Hire **$45,000.** site area earthwork, grading, HOUSTON, TEX.

John Baldwin, c/o Braeburn Glen Subdivision, 3218 Roland St., Houston, Tex., Purchase and Hire **$46,000.** c.i. water lines, HOUSTON, TEX.

John Baldwin, c/o Braeburn Glen Subdivision, 3218 Roland St., Houston, Tex., Purchase and Hire **$75,000,** hard-paved streets, curbs and gutters, HOUSTON, TEX.

Prokop Building Co. Inc., 6903 Long Point, Houston, Tex. Own Forces, **$46,500.** water lines, facilities, HOUSTON, TEX.

Prokop Building Co. Inc., 6903 Long Point, Houston, Tex., Own Forces, **$77,000.** sanitary sewers, **$75,000.** storm sewers, HOUSTON, TEX. CD 7/26.

Prokop Building Co. Inc., 6903 Long Point St., Houston, Tex. Own Forces, **$77,500.** asphalt-paved streets, HOUSTON, TEX.

Graver Constr. Co., 5343 McCormick St., Houston, Tex. CA **$86,000.** addnl. natural gas lines at Point Comfort, PORT LAVACA, TEX. Aluminum Co. of America, Port Lavaca, Tex.

Graver Constr. Co., 5343 McCormick St., Houston, Tex. CA **$49,115.** addnl. water lines, facilities, at Point Comfort, PORT LAVACA, TEX. Aluminum Co. of America, Port Lavaca, Tex.

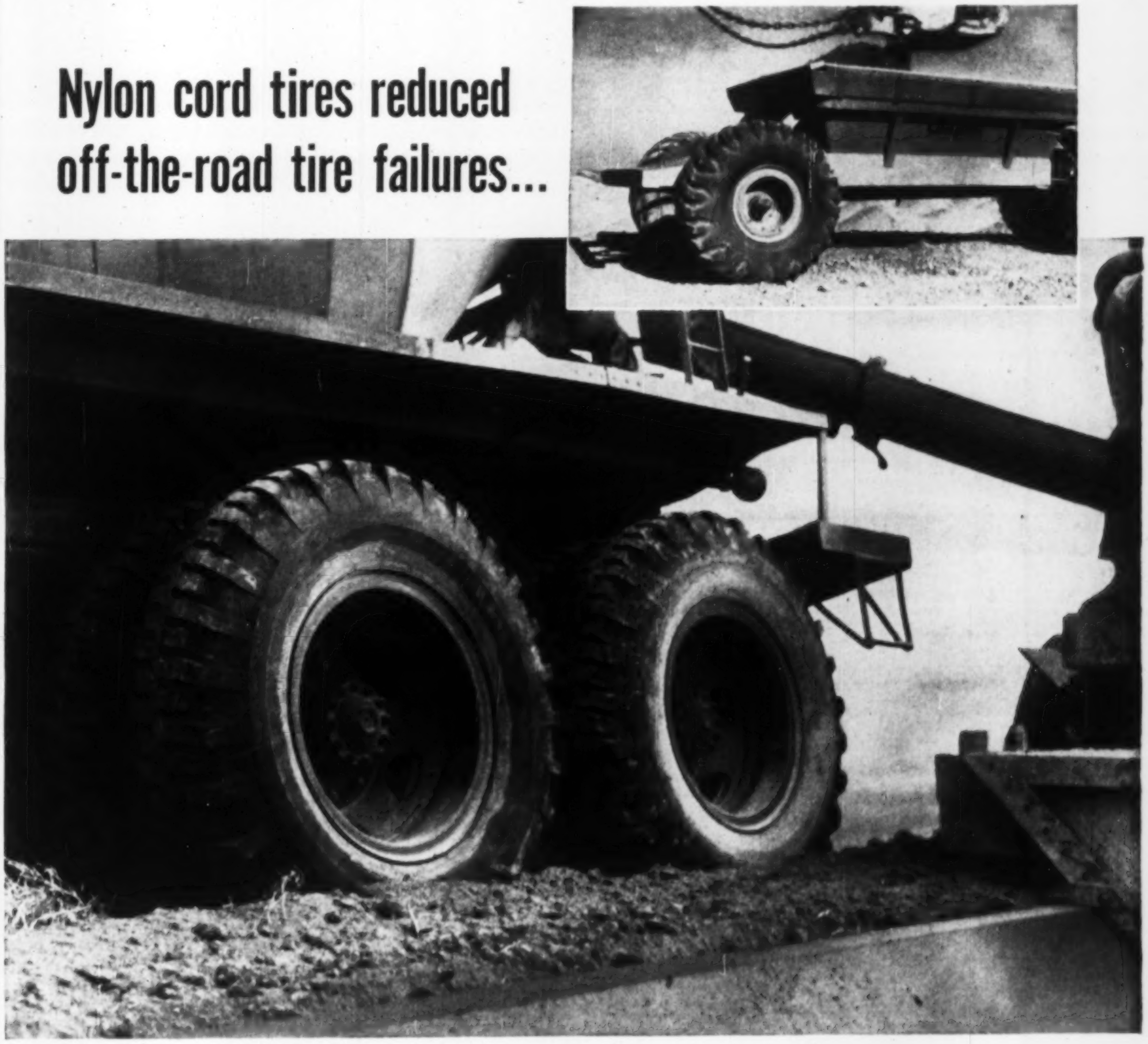
Graver Constr. Co., 5343 McCormick St., Houston, Tex. CA **$83,335.** addnl. sewer lines, at Point Comfort, PORT LAVACA, TEX. Aluminum Co. of America, Port Lavaca, Tex.

City Public Service Bd., Navarro and Villita Sts., San Antonio, Tex. Own Forces, **$250,000.** some transformer work; **$375,000.** overhead electric lines; **$75,000** services and gas lines, SAN ANTONIO, TEX. Grand total $700,000. CD 1/25.

† **WYOMING**—**U. S. Forest Service**, Denver Federal Center, Denver, Colo., rejected bids July 24, Sand Lake Road 582, Medicine Bow National Forest, Carbon Co. LB **$113,056.** CD 8/2, under LB.

(Continued on page 108)

Nylon cord tires reduced off-the-road tire failures...



NOW NYLON CUTS TRUCK TIRE COSTS, TOO

M. C. TRENT,
Vice Pres., F. M. Reeves & Son, Inc.
Roswell, N. M., reports:

"When we found how well nylon cord tires stood up on off-the-road units, we started using them on our trucks, too. That was two years ago. Since using nothing but nylon cord tires, we haven't had a single tire failure!

Nothing but Nylon

"We haul concrete, sand and gravel, so our equipment gets a beating both on and off the road. We're so pleased with the way nylon cord tires have worked out that we use nothing else—on old or new equipment."

PROVE TO YOURSELF that nylon cord truck tires give more mileage, more retreads—lowest cost per mile. Ask your dealer about nylon cord truck tires today. (Du Pont makes the tough nylon yarns, does not produce tires.)

DU PONT NYLON for TIRE CORD

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

NOW . . . IN PASSENGER-CAR TIRES, TOO . . . THE STRENGTH OF NYLON . . .
FOR UTMOST SAFETY . . . SUREST PROTECTION AGAINST TIRE TROUBLE

(Continued from page 106)

▲† **J. W. Bateson Co., Inc.**, 400 Gibson Life Bldg., Dallas, Tex., LB **$2,483,893**. service and supply area WAREHOUSE, IEO Facilities, Air Force Academy IFB-05-613-21, COLORADO SPRINGS, COLO. Dpt. Air Force, U. S. Air Force Academy Constr. Agency, P. O. Box 167, Colorado Springs, Colo. Bids July 31. CD 7/17.

BUILDINGS—LB & CA

Decorah Development Co., Decorah, Iowa, day labor, **$75,000-$100,000**. 1 story, 10,000 sq. ft. masonry, steel, concrete INDUSTRIAL BLDG., DECORAH, IOWA. CD 7/27.

Miller-Stauch Constr. Co., Railway Exchange Bldg., Kansas City, Mo. CA **$150,000**. SERVICE, WAREHOUSE, with OFFICE, KANSAS CITY, MO. Dealers Transport Co., Hy. 69 near Pleasant Valley, R.F.D. Kansas City, Mo. S. H. Sieben, 1009 Baltimore St., Kansas City, Mo., archt.

Interstate Constr. Co., 3621 Troost Ave., Kansas City, Mo. CA **$275,000**. 2½ story GARAGE with parking levels N.W. corner 12 and McGee Sts., KANSAS CITY, MO. Traders National Bank, 1111 Grand St., Kansas City, Mo. Awarded Apr. 10. CD 3/16/55.

H. Kissel's Sons, 2140 E. College Ave., St. Louis 7, Mo. CA Est. **$600,000**. general constr. 4 story, bsmnt., 34x202 ft. convent, 40x175 ft. chapel, ST. CHARLES, MO. St. Joseph's Home, (Carmelite Home), Carmelite Sisters, Mother Emmerentia, superior, 723 Clay St., St. Charles, Mo. Bids June 29. CD 6/20.

T. J. Bettes Co., Liberty Bank Bldg., Oklahoma City, Okla. Owner Builds. **$500,000**. 40 addnl. HOUSES in Casady Square Sixth Addn., OKLAHOMA CITY, OKLA. CD 9/22.

A. Henson Constr. Co., 909 N. Mockingbird Lane, Dallas, Tex., Own Forces, **$355,000**. 45 frame DWELLINGS, ABILENE, TEX. CD 7/12.

Mid-Tex Constr. Co., Mineral Wells, Tex., Own Forces, **$350,100**. 25 DWELLINGS, ANDREWS, TEX. CD 7/12.

B. L. McGee Constr. Co., Box 782, Austin, Tex., LB **$417,900**, PRINTING, BINDING, TRIMMING, ROTARY PRESS PLANT No. 1, AUSTIN, TEX. The Steck Co., 205 W. 9 St., Austin, Tex. Bids July 24. CD 7/2.

▲ **J. H. & J. A. Schumacher**, 1325 W. Mason St., Fort Worth, Tex., Purchase and Hire, **$361,000**. 38 DWELLINGS **$360,000**. 40 DWELLINGS; **$378,000**. 36 DWELLINGS, BURLESON, TEX. Grand total $1,099,000. CD 7/16.

Edwin Flato Co., 2022 Laredo St., Corpus Christi, Tex., Own Forces, **$347,100**. 18 DWELLINGS; **$379,500**. 26 DWELLINGS, CORPUS CHRISTI, TEX. CD 5/3.

Roger Seaman Constr. Co., 1324-T Roosevelt Blvd, Alice, Tex., Own Forces, **$368,500**. 40 frame DWELLINGS, EDINBURG, TEX. CD 7/19.

S & W Construction Co., 503 Bunker Rd., El Paso, Tex., Own Forces, **$448,000**. 56 frame DWELLINGS, EL PASO, TEX. CD 7/31.

Centex Constr. Co., 4606 Greenville St., Dallas, Tex., Own Forces, **$429,100**, 44 DWELLINGS **$470,190**, 36 DWELLINGS, GRAND PRAIRIE, TEX. CD 7/6.

▲ **Centex Constr. Co.**, 4606 Greneville St., Dallas, Tex., Owner Builds. **$344,900**. 30 DWELLINGS; **$345,500**, 28 DWELLINGS; **$380,000**, 38 DWELLINGS, GRAND PRAIRIE, TEX. Grand total $1,070,400. CD 6/14.

Roger Seaman Constr. Co., 1324 T. Roosevelt Blvd., Alice, Tex. Own Forces, **$375,000**. 50 frame low-cost DWELLINGS; **$350,000**, 40 low-cost DWELLINGS, HARLINGEN, TEX. CD 7/20.

Earl Gilbert, 5601 Airline St., Houston, Tex., Purchase and Hire, **$351,500**. 12 masonry-type DWELLINGS, HOUSTON, TEX. CD 7/26.

United Lumber & Bldg. Co., 1110 Prospect St., Houston, Tex., Owner Builds, **$347,275**. 25 DWELLINGS, in Lake Forest Addition, HOUSTON, TEX.

John Lorino, 5601 Airline St., Houston, Tex., Own Forces, **$350,000**. 27 DWELLINGS, HOUSTON, TEX. CD 7/26.

N. R. Wall Realty Co., 1724 Bissonnett St., Houston, Tex., Owner Builds, **$750,000**. 78-unit APARTMENT, HOUSTON, TEX. CD 8/2.

▲ **Marvin Henry Builders, Inc.**, 4208 Ella Blvd., Houston, Tex., Own Forces, **$368,750**, 31 DWELLINGS; **$371,115**, 24 DWELLINGS; **$346,175**, 18 masonry-type dwellings, HOUSTON, TEX. Grand total $1,086,040. CD 7/6.

▲ **Faulkner Building Co.**, West Bldg., Houston, Tex., Own Forces, **$432,000**. 32 DWELLINGS; **$373,300**, 30 DWELLINGS; **$366,118**, 23 DWELLINGS, HOUSTON, TEX. Grand total $1,171,418. CD 7/6.

R. V. King, Contractor, 12202 Hempstead St., Houston, Tex. Own Forces, **$347,000**. 31 DWELLINGS, HOUSTON, TEX. CD 6/18.

Prokop Building Co. Inc., 6903 Long Point, Houston, Tex., Own Forces, **$375,000**, 15 DWELLINGS; **$361,000**, 12 DWELLINGS, HOUSTON, TEX. CD 7/25.

John Baldwin, c/o Braeburn Glen, 3218 Roland St., Houston, Tex., Purchase and Hire, **$377,000**. 27 DWELLINGS. **$364,000**. 28 DWELLINGS, HOUSTON, TEX. CD 7/25.

Geo. A. Schuler, Jr., 1810 Bissonet St., Houston, Tex., Purchase and Hire, **$355,000**, 10 masonry DWELLINGS. **$359,825**, 13 masonry type DWELLINGS, HOUSTON, TEX. CD 7/6.

M. C. Andrews Jr., Grand Prairie, Tex., Own Forces, **$369,050**. 28 DWELLINGS; **$373,000** 30 DWELLINGS, IRVING, TEX. CD 7/31.

▲ **Belin & Mallette, Builders**, 1502 Belin St., Houston, Tex., CA, **$370,000**, 37 DWELLINGS; **$382,500**, 35 DWELLINGS; **$360,000**, 26 DWELLINGS, JACINTO CITY, TEX. Jacinto Oaks Inc., 1502 Belin St., Houston, Tex. Grand total $1,112,500. CD 6/22.

Roden Constr. Co., 3617 Collinwood St., Ft. Worth, Tex. Own Forces, **$368,100**, 27 DWELLINGS; **$345,600**, 23 DWELLINGS, Mansfield, TEX. CD 6/28.

Joe & C. D. Danna, 4922 Greenville Ave., Dallas, Tex., Force Account, **$379,000**, 36 DWELLINGS; **$349,110**, 25 DWELLINGS; MESQUITE, TEX. CD 6/22.

Boespflug Constr. Co., 502 N. 25 St., Billings, Mont., LB **$998,500** general contract HIGH SCHOOL and GYMNASIUM, THERMOPOLIS, WYO. Hot Springs County High School Dist., Thermopolis, Wyo. Bids July 25. CD 6/29.

▲ **Columbine Commercial Contractors**, 1845 Sherman St., Denver, Colo., CA **$5,000,000**. 140,000 sq. ft. FACTORY, DENVER, COLO. Ramo-Woolridge Corp., 8820 Bellanca St., Los Angeles, Calif. CD 2/24.

FAR WEST

HEAVY CONSTRUCTION—BA

Calif., Los Angeles—BA 8/24—Los Angeles Co. Hall of Records, sanitary sewers in Rainier Ave., South Whittier, $109,910. CD 7/6.

Calif., El Segundo—RECREATION CENTER—BA 10/8—City, City Hall, 10,000 sq. ft., recreation center, $500,000. Plans deposit $50. Wm. Woollet, 124 W. 24 St., Los Angeles, archt. CD 9/29/54.

BUILDINGS—BA

Calif., Azusa—SCHOOL—BA 8/31—Citrus Union High School Dist., 18824 E. Foothill Blvd., second increment, Azusa High School. $842,000. Neptune & Thomas, 1560 W. Colorado St., Pasadena, engrs. CD 3/1.

HEAVY CONSTRUCTION—LB & CA

Radich & Ferguson, 3000 Empire Ave., Burbank, Calif. and **Martin Kordick**, 325 N. Santa Anita, Arcadia, Calif., LB **$204,777** (12 bidders) 12½ mi. sanitary sewers, BEAUMONT, CALIF. City, 500 Grace St., Beaumont, Calif. Bids July 25. CD 7/11.

Spaks & Mundo, 1711 S. Soto St., Los Angeles, Calif., CA, **$106,191**. imprv. alleys in Alley Dist. No. 14, BEVERLY HILLS, CALIF. City, 450 N. Crescent Dr., Beverly Hills, Calif. Koebig & Koebig, 3242 W. 8 St., Los Angeles, Calif. engrs. Bids July 3, awarded July 17. CD 9/21/51.

Peter Kiewit Sons Co., Meford, Ore., LB **$579,494** (1 bidder) bridge across Trinity River, Willow Creek, EUREKA, CALIF. Humboldt Co., Court House, Eureka, Calif.

▲ **Piombo Constr. Co.**, P. O. Box 935, San Carlos, Calif., CA **$1,168,573**, 105 ft. high, 1100 ft. long earthfilled UVAS dam and 2.6 mi. of road near Gilroy and Morgan Hill, GILROY, CALIF. South Santa Clara Valley Water Conservation Dist. City Hall, Gilroy, Calif. CD 8/1, under LB.

▲ **Matt J. Zaich Co.**, 6828 Farindale Ave., Los Angeles, Calif., LB **$2,551,551**. Proj. 46, Lincoln Blvd. and Indiana Ave. storm drain, Santa Monica, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Aug. 3. CD 7/12.

Tomei Constr. Co., 4737 Orion Ave., Van Nuys, Calif., LB **$292,072**, est. $300,000 imprv. 6 St., Alvarado St. to Vermont Ave., LOS ANGELES, CALIF. City, City Hall, Los Angeles, Calif. Bids Aug. 1.

Tomei Constr. Co., 4737 Orion Ave., Van Nuys, Calif. CA, **$211,638**, imprv. Hollywood Blvd. from 190 ft. west of Argyle St. to La Brea Av., LOS ANGELES, CALIF. City, City Hall, Los Angeles, Calif. Bids June 27, awarded July 18. CD 10/13.

Newman & Malcom, Inc., 14663 Keswick St., Van Nuys, Calif., CA, **$106,928**, imprv. streets in Zelzah Ave. and Nordhoff St. Imprvt. Dist. (Los Angeles, Calif.).

Hoagland-Findley-Kemper, 3254 Cherry Ave., Long Besch, Calif., CA, **$994,400**, est. $1,000,000 distribution-pedestrian tunnel for central heating and refrigeration, Civic Center, LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids July 18. CD 7/25.

† **Gordon Fields**, 1555 San Bernardino Ave., San Bernardino, Calif., LB **$404,900**, est. $500,000 (6 bidders) airman dining hall, Norton Air Force Base, ENG-04-35-3-57-9, SAN BERNARDINO, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids July 27.

Rice Brothers, 8 and Yuba Sts., Marysville, Calif., CA, **$98,647** (5 bidders) reconstr. road portion of Hammer Lane, STOCKTON, CALIF. San Joaquin Co., Court House, Stockton, Calif. CD 3/19/45.

Granite Constr. Co., Box 900, Watsonville, Calif., CA, **$76,983**. imprvs. Logandale Subdivision incl. sewers, curbs, etc. WATSONVILLE, CALIF. Wesley Logan, 731 N. Main St., Watsonville, Calif. Tom Polk Williams, Jr., 840 Front St., Santa Cruz, engr.

BUILDINGS—LB & CA

Hadley-Cherry, 335 N. La Cienega St., Los Angeles, Calif., CA, **$376,000**. 47 frame, stucco DWELLINGS, Viceroy, Fenimore and Linfield Sts., AZUSA, CALIF. Coast Three Ten Investment Co., 335 N. La Cienega St., Los Angeles, Calif.

H. Roach Constr. Co., 607 N. Vermont Ave., Los Angeles, Calif., Owner Builds. **$476,000**. 150,000 sq. ft. INDUSTRIAL BLDG., EAST LOS ANGELES, CALIF.

O. L. Dahn, 1825 Redondo Ave., Long Beach, Calif., CA, **$115,000**, concrete block UTILITY and CONCESSION BLDG., 251 Perimeter St., LONG BEACH, CALIF. City, City Hall, Long Beach, Calif. Montiorth & Strickland, Ocean Center Bldg., Long Beach, Calif. archts.

▲ **W. J. Nicholson**; P.O. Box 390 A, Santa Clara, Calif., LB **$1,732,717**. Holy Cross Girls HIGH SCHOOL MOUNTAIN VIEW, CALIF. Sisters of Holy Cross, c/o Vincent G. Raney, archt., 233 Post St., San Francisco, Calif. Hall, Pregnoff & Matheu, 251 Kearny St., San Francisco, engrs.

▲ **Westcliff Co.**, 19752 Acacia St., Santa Ana, Calif., CA, **$1,803,450**. 90 frame, stucco DWELLINGS, Westcliff Dr., Dover Lane and Devon Lane, NEWPORT BEACH, CALIF. Westcliff Co., Austin Sturtevant Co., J. H. Brownell, Richard Leitch, 19752 Acacia St., Santa Ana, Calif.

Hart & Hynding Inc., 472 Tehama St., San Francisco, Calif., LB **$509,654** (5 bidders) SERVICE bldg. and roads, parking areas, Laguna Honda Home, Job 1423, SAN FRANCISCO, CALIF. City and San Francisco Co., Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Aug. 1. CD 7/19.

Geo. Buccola, 1242 Lincoln Ave., Santa Ana, CA, **$768,000**. 44 frame, stucco DWELLINGS, Broadway and Euclid Sts., Tract 2995, SANTA ANA, CALIF. Sherwood Rancho, 1242 Lincoln Ave., Santa Ana, Calif.

Crone Co., 922 W. Center St., Santa Ana, Calif., CA **$561,900**. 45 frame, stucco DWELLINGS, Loara and Crone Sts., Tract 2155, SANTA ANA, CALIF. Loara Land Co., 922 W. Center St., Santa Ana, Calif.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Que., Montreal**—PARK AND ZOO—BA 8/22—City, City Hall, Angringon Park and Zoo, west end of Cote St. Paul Rd., $7,000,000. Plans deposit $100. McFadzean, Everly Ltd., c/o Brouillet & Carmel, 3600 Barclay Ave., Landscape engr. Lucien L'Allier, c/o owner, ch. engr. CD 11/9/55.

Ontario—BA 9/5—Sta. Lawrence Seaway Auth. No. 2 Temporary Bldg., Ottawa, supplying, installing standby diesel generators at Locks on St. Lawrence Seaway, Cornwall. Plans deposit $100. A. G. Murphy, 655 Cathcart St., Montreal, Que., owners ch. engr.

BUILDINGS—BA

Ont., Toronto—INSTITUTE—BA 8/22—Etobicoke Twp. Bd. Educ., 4969 Dundas St. W., Islington, Thistledown Collegiate Institute, $900,000. Gordon & Adamson & Assocs., 52 St. Clair Ave. E., archts. Onasick & McMurty, 416 Bloor St., E., engrs. CD 5/4.

Ont., Toronto—HOSPITAL—BA 8/28—The Doctors Hospital, 28 Major St., 6 story hospital addn. $400,000. Crang & Boake, 79 Huntley St., archts. CD 5/18.

▲ **Ont., London**—TEACHERS CALLEGE—BA 9/5—Dpt. Pub. Wks., Toronto, teachers college adjoining University of Western Ont. Campus, $2,000,000. CD 4/27/55.

BUILDINGS—SLC

Ont., Red Rock—COMMUNITY CENTER—St. Lawrence Corp. Ltd., Sun Life Bldg., Montreal, Que. soon lets contract, community center at pulp and paper town. $400,000. A. Leslie Perry, 1434 St. Catherine St. W., Montreal, Que., archt.

Ont., Sault Ste. Marie—RAIL MILL, etc.—Algoma Steel Corp., Ltd., Queen St., soon lets contract rail mill, welfare and office bldg., diesel shop welfare bldg. addn., bar and strip mill. About $500,000. Foundation of Canada Eng. Corp. Ltd., 200 Bloor St. E., Toronto, engrs. CD 11/29.

HEAVY CONSTRUCTION—LB & CA

R. E. Law Crushed Store Ltd. Hy. 3, Port Colborne, Ont., CA **$133,000**, 20,000 sq. yds. gran. base pavement on Central Ave. from Wintemute to Bertie St., FORT ERIE, ONT. Town, Town Hall, Fort Erie, Ont. C. R. Hagey, Eng. Assoc., Riverview Bldg., Ft. Erie, engrs. Awarded July 30.

O. Ruoho Construction, Eighth Ave., Nipigon, Ont., CA **$61,900**. Nipigon River imprvs., NIPIGON, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Awarded July 28.

▲ **Swansea Constr. Co. Ltd.**, 363 Rogers Rd., Toronto, Ont., CA **$3,623,241** (2 bidders) road work Lakeshore Expressway, Humber River to Spencer Ave. Station 36 plus 00 to Station 164 plus 50, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 30. CD 7/9.

John T. Hepburn Ltd., 914 Dupont St., Toronto, Ont., LB **$352,307** (2 bidders) supplying, fabricating and erecting structural steel for subway, Canadian Pacific Ry. tracks, Bloor St. West of Islington Ave., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 30. CD 7/17.

Malvern Constr. Co. Ltd., 490 Dawes Rd., Toronto, Ont., LB **$329,591** open cut of concrete sewer pipe 48-in., inside diam., E. York, extending easterly from Don Mills Rd. along Massey Creek to Danfort Park Sewage Plant, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. CD 8/10/44.

(Continued on page 110)

U. S. 66, WAYNESVILLE, MO.

NO. 1234

PAY TO THE ORDER OF *Highway Users* $ *13,000.00*

Thirteen Thousand and no/100 DOLLARS

Annual earnings per mile per year *U.S.66*

Every road earns money—in gas taxes and license fees paid by drivers using it. The more vehicle miles of traffic handled, the more money earned.

The road pictured is U.S. 66 near Waynesville, Mo. It carries a daily average of 6,450 vehicles, many of them commercial. Here's how the earnings of this concrete road are computed:

Vehicles traveling this road per day	6,450
Times average vehicle tax per mile in Mo.	$.00568
Equals earnings per day per mile	$ 36.64
Times the number of days in a year	365
Equals annual earnings per mile	$13,374
Minus the annual cost to build and maintain such a road during its expected lifetime	$10,000
Equals annual net profit per mile	$ 3,374

Similar analyses elsewhere show that concrete roads earn the most "profit." That's because they attract the most traffic and have the lowest maintenance cost, the longest life and the lowest annual cost.

These factors are more significant than ever under the Federal-Aid Highway Act of 1956, especially on the National System of Interstate Highways.

With 90% of the cost of these roads being paid by the federal government, states will want the best pavement. That's concrete. Its rugged durability makes it the most durable of pavements. Its life expectancy is at least 50 years.

Once built, these roads must be maintained by the state—a good reason for choosing a pavement with a proved record of low maintenance cost. That's concrete. Records from the 24 states keeping such data reveal that concrete costs an average of 26% to 59% less to maintain than other pavements.

Yes, more than ever concrete is the logical choice for all main roads to be built in the biggest road building program ever undertaken in this country.

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(Continued from page 108)

▲ **Dominion Bridge Co. Ltd.**, Lachine, Montreal, Que., LB **$2,589,477**, supplying, erecting sector gates at Cote St. Catherine Lock, Upper Beauharnois Lock, Beauharnois, Que. and Iroquois Lock, Cornwall, Ont., QUEBEC and ONTARIO. St. Lawrence Seaway Auth. No. 2 Temporary Bldg., Ottawa, Ont. Bids July 24. CD 7/2.

▲ **Key Construction Ltd.**, Bleury St. and **Canit Construction Ltd.**, 507 Place d'Armes, Montreal, Que., CA **$2,234,856**. third section Molsons Creek collector sewer, MONTREAL, QUE. City, City Hall, Montreal, Que. Bids July 16, awarded July 27. CD 7/24, under LB.

BUILDINGS—LB & CA

Stone Building Co. Ltd., 3687 Bathurst St., Toronto, Ont., Owner Builds, **$592,000**. 74-suite APARTMENT, 55 Charles St. W., TORONTO, ONT. Bregman & Hamann, 7 Adelaide St. E., archts. Farkas & Barron of Canada Ltd., 7 Adelaide St. E., Toronto, Ont., engrs.

Domex Co. Ltd., 1290 Bay St., Toronto, Ont., CA **$600,000**. 80,000 sq. ft. PLANT, Hochelaga St. near Haig St., MONTREAL, QUE. International Envelope Ltd., 1950 Claremont Ave., Montreal, Que. Awarded July 30.

Victor Brenier, 2968 Ontario St. E., Montreal, Que., CA **$250,000**. 46,000 sq. ft. WAREHOUSE, south of Rouen St. between Charlegmagne and Jeanne d'Arc Aves., MONTREAL, QUE. Orleans Realty Co. c/o contractor. George Lemay, 6262 Briand St., Montreal, Que., archt. Awarded July 27.

ALASKA

BUILDINGS—LB & CA

▲ † **Nelse Mortensen & Co.**, 1021 Westlake Ave. N., Seattle, Wash., CA **$1,184,617**. POST OFFICE and COURT HOUSE, NOME, ALASKA. General Services Admin., 19 and F Sts. N. W., Wash. 25, D. C. Bids May 8, awarded July 13. CD 5/11, under LB.

PROPOSED PROJECTS

WATER SUPPLY

Colo., Aspen—Aspen Water Co., c/o Fred Hendy, Aspen, revamping water sys. **$500,000**. Dale Rea, 220 W. Chenango, Littleton, consult. engr.-archt.

Ill., Winfield—Village of Winfield, water reservoir tank, well, pump house. **$100,000**. Waterl E. Deuchler & Assoc., Inc., 63 S. LaSalle St., Aurora, consult. engr.

Mo., Bethany—City water reservoir, **$400,000**. Larkin & Assoc., 19 E. Gregory, Kansas City, Mo., consult. engrs.

Mo., Maryville—City, defeated bonds July 24, expansion, improvements water system, **$450,000**. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs. CD 7/16.

Neb., Bellevue—City, defeated **$125,000** bonds July 24, water system imprvs. CD 6/28.

N. J., Edison Tp.—Middlesex Water Co., 52 Main St., Woodbridge, imprv. to water supply sys. incl. 5 m. g. 48x133 ft. storage tank, **$200,000**. C. J. Olsen, 52 Main St., Woodbridge, consult. engr.

N. J., Franklin—Franklin Boro. plans by Waldo J. Clarke, 53 State Highway, expansion of Franklin Water supply, **$183,000**.

Ohio—State Hy. Dpt., Columbus, relocating 42 in. water conduit to municipal light plant with 732 ft. 36 in. conduit at site of Scioto-Sandusky interchange, Columbus, Franklin Co. **$125,000**.

Tex., Monahans—City, cancelled July 31 bond election, elevated water storage tank **$100,000**; WW mostly lines, **$630,000**. CD 7/24.

▲ **Tex., Odessa**—City, water filtration plant, **$1,200,000**; water lines, **$75,000**; water pumping unit, **$60,000**.

Wyo., Big Horn Mountains—Owner, c/o Bishop & Sturlock, consult. engrs., 280 Main, Lander, reservoir storage capacity of 15,700 acre ft. **$350,000**.

Que., St. Barnabe—Municipality of St. Barnabe, WW, **$200,000**. Romeo Morrissette, 15 Longval St., Cap de la Madeleine, consult. engr.

Que., Shawinigan East—Municipality of Shawinigan East, Town Hall, watermains, **$100,000**.

SEWERS, WASTE DISPOSAL

▲ **Calif., Richmond**—City Council, City Hall, **$8,000,000** bond election Dec. 11, sewage and sewage disposal plant. CD 10/29/51.

Conn., Deep River—Town of Deep River, municipal sewerage system, pumping station and disposal plant, **$447,000**. Philip W. Genovese & Assoc., 294 Elm St., New Haven, Conn., consult. engrs. CD 4/20/50.

Ky., Louisville—Metropolitan Sewer Dist., 412 W. Market St., sewer extension along grade lane to serve Ky. Air National Guard. **$161,000**. Morris Forman, c/o owner, engr. CD 3/15.

Mich., Traverse City—City, City Hall, storm sewer, southwest sections of city. **$145,000**. C. L. Andrew, City Hall city engr. CD 7/26.

▲ **Minn., Golden Valley (P.O. Minneapolis)**—Village R. Owens, clk.-admin. 26,000 lin. ft., Northwest Sanitary Trunk sewer west of Hy. 100 to southeast corner of village, **$1,000,000**, G. M. Orr Engr. Co., 1004 Marquette Ave., Minneapolis, consult. engr. Bids next September. CD 11/22.

Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 12 Blvd. and Market St., Zone 3, relocation of sewers, water mains street lighting facilities in Plaza redevelopment area, and reconstruction sewers in Forest Park in connection with Mark Twain Expressway project. **$123,690**. J. H. Horan, ch. engr. Dpt. Streets & Sewers, 325 City Hall, CD 8/5/48.

▲ **N. J., Hackensack**—Bergen County Sewer Auth. 66 Zabriski Rd., trunk line to Bergen County Sewer Auth. to cover 19 Hackensack River municipalities now unsewered, **$25,000,000**. Bogert & Childs Consulting Engineers, 145 E. 32 St., New York, N. Y., consult. engrs. (**Correction**—name of consulting engineers.) CD 7/9.

▲ **O., Martins Ferry**—City, sewage treatment plant, **$1,000,000**. Al LeFeber & Assoc., 2933 Woodburn Ave., Cincinnati, consult. engrs. CD 1/29/47.

O., Shiloh—Village, Village Hall, $14,000 bond election Nov. 6, to help finance sewerage system, incl. disposal plant. **$275,000**.

Tex., Amarillo—Boston Development Co., J. D. Boston, 3410 Lamar, sanitary sewers, **$75,000**; storm sewers, **$75,000**; off S. Manhattan, 27th Ave., S. Osage and 19th Sts.

Tex., Dallas—Longhorn Constr. Co., 9620 John West Rd., sanitary sewers, **$80,000**; storm sewers, **$77,125**, part of 20 million 1400 dwelling development program.

Tex., Houston—City, sanitary sewer main N. Braeswood Blvd., **$227,636**. John G. Turney, 2502 S. MacGregor Way, consult. engr. CD 2/21.

Tex., Monahans—City, cancelled July 31 bond election sewage treatment plant, **$300,000**; sanitary sewer lines, **$90,000**. CD 7/24.

Tex., Mineola—City, voted bonds sanitary sewer lines, **$75,000**; sewage disposal unit, **$76,000**.

▲ **Utah, Salt Lake City**—Cottonwood Sewer Dist. City County Bldg., bond election Aug. 29, sewer for area lying between 5600 and 9500 south, between 9th East and Wasatch Blvd. **$1,600,000**, Neff Engineers 2500 Evergreen Ave., consult. engrs.

▲ **Wyo., Casper**—City, City & Co. Bldg., plans by Robert L. Streeter, archt. and consult. engr., P. O. Box 2010, sewage disposal system. **$1,000,000**.

Wyo., Cheyenne—City, City Hall, bond election Aug. 14, for storm sewers to serve Eastridge addition and area Southeast, **$225,000**. J. T. Banner & Assoc., 201 Garlett Bldg., Laramie, consult. engrs. and archts. CD 4/6/56.

Ont., Chatham—City, City Hall, 5,000 ft. 42 and 60 in. sewer, Lacroix St. **$270,000**. Todgham & Case, 21 Seventh St., consult. engrs.

▲ **Ont., London**—City Council, Mayor Ray Dennis, enlarging, imprv. part of down town sewerage system, **$2,500,000**; sewer extension for Chelsea Heights, **$1,000,000**. Eric Skelton, City Hall, city engr. CD 12/12.

Ont., Newmarket—Ontario Water Resources Comn., 67 College St., Toronto, sewage treatment plant, **$250,000** Proctor, Redfern & Laughlin, 11 Jordan St., Toronto, consult. engrs.

Ont., Owen Sound—Ontario Water Resources Comn., 67 College St., Toronto, sewage treatment plant **$350,000**. Gore & Storrie Ltd., 1130 Bay St., Toronto, consult. engrs.

Ont., Petrolia—Ontario Water Resources Comn., 67 College St., Toronto, sewage disposal plant, **$350,000**.

Que., Shawinigan East—Municipality, Town Hall, Shawinigan East, sewers, **$175,000**.

BRIDGES

CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento,

Santa Cruz Co.—bridge across Soquel Creek on Soquel Dr., Soquel FAS County Rte. S-1146, **$127,000**. Bids in August.

Trinity Co.—new bridge and approaches across Mad River on Sign Rte. 36 about 3.1 mi. east of Humboldt County Line, **$220,000**. Bids in about 1 month.

Colo., Denver—City and Denver Co., City & County Bldg., viaduct at West 6 Ave., and a ramp from West 8 Ave. to connect with interchange, **$700,000**. Bids this fall. Dewey Wright, city engr.

CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford,

Seymour—permanent bridge over Naugatuck River at Broad St. **$200,000**;

770 ft. temporary bridge over Naugatuck River at Broad St. combination steel and timber. **$75,000**.

Conn., Washington—Town repair flood damage to bridges on town highways, **$300,000**.

▲ **Ia., Muscatine**—Muscatine Bridge Comn., toll bridge across Mississippi River between Muscatine, Ia. and Drury, Ill. **$6,000,000**.

PRINCE EDWARD ISLAND—Dpt. Hys. & P. Wks., Charlottetown,

Charlottetown—800 ft. bridge Hillsborough River **$100,000**.

QUEBEC—Provincial Dpt. P. Wks., Quebec City,
Thetford Mines—bridge reconstr. over White River, Abbe Ave. N. **$100,000**.

Que., Shawinigan Falls—Canadian Natl. Rys., A. V. Johnston, ch. engr., 360 McGill St., Montreal, and City of Shawinigan Falls, viaduct Haute Ville. **$250,000**.

STREETS AND ROADS

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

Fresno Co.—grading, surf., 3 conc. bridges on Manning Ave., between Colorado Rd. in San Joaquin and McMullin, 7.8 mi. FAS Co. Rte. S-817, **$490,000**. Bids in September.

Widn., realignment on portions of Sign Rte. 168 between 1 mi. east of Tollhouse and top of Tollhouse Grade, **$88,000**. Bids in one month.

Kern Co.—surf. 5.5 mi. U. S. 99 between Sandrini Rd. and 0.6 mi. south of McKittrick Rd. **$325,000**. Bids in one month.

Los Angeles Co.—grading Harbor Freway between U. S. 101 Alternate and Lomita Blvd., **$85,000**. Bids in one month.

Madera Co.—grading, surf. 5.5 mi. sealing 18.3 mi. Firebaugh-Madera Rd. between Firebaugh Bridge and Madera, FAS Co. Rte. S-811, **$178,000**. Bids in November.

Merced Co.—surf. 6.5 mi. FAS Co. Rte. S-919. Snelling-LaGrange Rd. from Snelling to Stanislaus Co. Line, **$105,000**. Bids in August.

San Bernadino Co.—grading, surf. 2.1 mi. on Cedar Ave. between Riverside Co. line and Slover Ave. FAS Co. Rte. 706, **$231,000**. Bids in January.

San Mateo Co.—reconstr. base. surf. 2.1 mi. on portions of Sign Rte. 5 between 2.6 mi. north of Alpine Rd. and LaHonda Rd. **$85,000**; Bids in one month.

Santa Barbara Co.—Protective planting between Cat Canyon Rd. and Solomon Summit undercrossing 5.8 mi. U. S. 101. Bids in one month. **$73,000**.

Calif., Fremont—City, City Hall, imprv. various streets, **$130,000**, Work 1956-57.

CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford,

Ellington and Stafford—bit. surf. tr. 3.9 mi. Rt. 30 from Tolland Line northerly to Rt. 20 **$75,000**.

Montville and Salem—stone surf. tr. 4.5 mi. Salem Turnpike (Rt. 82), **$80,000**.

Naugatuck—stone surf. tr. 4.7 mi. Rt. 63 from Rt. 8 southerly, **$80,000**.

Prospect—stone surf. tr. 4.9 mi. Rt. 69, **$81,000**.

CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford,

Plainville—Plainville Connector for relocated Rte. 6, between Cooke St. and White's Crossing, **$100,000**.

Conn., Wash.—Town, repair flood damage to various town roads, **$128,000**.

Ill., Decatur—City, Clarence A. Sablotny, mayor County Bldg. Section 80-C.S. East and West Eldorado St., Church St., to Illinois Central R.R., widening from 50 ft. and 52 ft. to 64 ft., distance 3,144 ft., 8 in. c. conc. base course, bituminous surfacing, curbing, etc. **$170,000**. Paul J. Stephens, County Bldg., city engr. CD 7/2.

Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 12 Blvd. and Market St., reconstruction; repaving Broadway, 14½ mi. through city, and installing new mercury vapor street lights and standards. **$375,780**. Construction in fall. H. J. Horan, ch. engr. Dpt. Streets & Sewer, 325 City Hall, engr.

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City,

Comanche Co.—4 lanes pavement on US 277 between Lawton and Fort Sill, **$200,000**.

Texas Co.—paving US 54 from Texowa to Kansas State Line, **$80,000**, G. H. Bittle, engr.

Tex., Jacksonville—City voted bonds July 24, 4-lane thoroughfare thru city. **$200,000**.

Tex., Monahans—City, cancelled July 31 bond election street imprvs., paving. **$200,000**. CD 7/24.

Wash., Puyallup—City, City Hall, bond election Sept. 11; surface drainage sys. **$275,000**. Gray & Osborne, 228 S. 2 St., Yakima, consult. engrs.

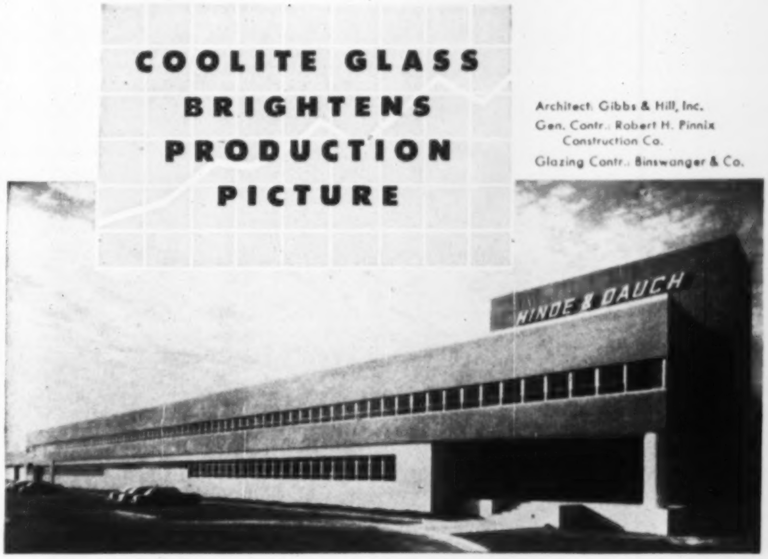
EARTHWORK, WATERWAYS

▲ **Calif., San Francisco**—City & Co. of San Francisco, Recreation & Park Comn., McLaren Lodge, Golden Gate Park, constr. addnl. breakwater and extending yacht harbor. **$5,000,000**.

▲ **Tex., Houston**—Harris Co., Court House, Houston, voted bonds, county-wide general drainage, **$2,500,000**; flood control Brays Bayou, **$1,000,000**; flood control, Buffalo Bayou, **$500,000**; flood control Hunting Bayou **$500,000**; flood control Halls Bayou, **$350,000**; flood control Little Oak Bayou, **$650,000**; flood control White Oak Bayou, **$2,000,000**. Frank Baldwin, c/o owner, dir. P. Wks. Eng.

AIRPORTS

Conn., Groton—APRON, etc.—State Pub. Wks. Dpt., 165 Capitol Ave., Hartford, new apron, imprv. bldgs. at Trumbull Airport. **$100,000**. George L. Sherwood, airport engr.



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Gen. Contr.: Robert H. Pinnix Construction Co.
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▲ **Tex., Dallas**—OPERATIONS BASE—Braniff International Airways, c/o Love Field, plans by Pereira & Luckman, 9220 Sunset Blvd., Los Angeles, Calif., Construction of operations base at Love Field, **$6,000,000.**

LATIN AMERICA

▲ **Mexico**—GAS LINE—Gas Industrial de Monterey, Monterey, Mexico, plans 130 mi. 22 in. gas line, parallel to 14 in. line from Reynosa to Monterey. **$3,900,000.**

Mexico, Silao—Sria. de Recuros Hidraulicos, P. de Reforma, 69, Mexico City, Mexico, plans irrigation dam, **$960,000.** Jose Fernandez, Luis Luna Morales c/o owner, engr.

▲ **Mexico, Tampico**—FACTORY—National Union Chemical-Pharmaceutical Mfgrs., Mexico City, plans cholorine-fertilizers factory, **$4,000,000.**

Mexico, Toluca—PLANT—Laboratorios Pfizer, S. A., Mexico City, Mexico, plans plant. **$960,000.**

▲ **VENEZUELA**—Ministery of P. Wks., Caracas, highway to link Caracas with seaport of Barcelona in eastern Venezuela from Caucagua southeast of Caracas to Barcelona about 124 miles **$12,000,000.**

PUERTO RICO

▲ **Puerto Rico, San Juan**—PLANT—American Can Co., 100 Park Ave., New York, N. Y., plans plant, Minillas Industrial Subdivision of Bayamon about 10 mi. from here. **$1,000,000.**

FOREIGN

▲ **Australia, Melbourne**—PLANT—British Nylon Spinners, Ltd. (subsidiary Courtaulds, 16 St. Martin's Le-Grand, London EC 1, England), plans plant, 100-acre site at Bayswater, near here. **$11,200,000.**

▲ **England, Hampshire**—REFINERY EXPANSIONS—Esso Petroleum Co., Ltd., 36 Queen Anne's Gate, London, S.W. 1, England, plans refinery expansions at Fawley. **$36,000,000.**

PUBLIC BUILDINGS

Calif., Bishop—SCHOOL—Bishop Elementary School Dist., Bishop, voted **$437,000** bonds, school. CD 5/23.

▲ **Calif., Costa Mesa**—HIGH SCHOOL—Newport Union High School Bd., E. 15 St., plans by George A. Lind, 2919 Newport Bldg., Newport Beach, and Pleger, Blurock & Heonger, 2515 Coast Hy., Corona Del Mar, 2 story, 87,000 sq. ft. high school. **$1,225,210.**

Calif., Redwood City—COUNTY—San Mateo, c/o Clerk, Courthouse, 4 story county bldg., next to existing jail. **$600,000.** CD 4/18/52.

Calif., Vacaville—SCHOOL—Vacaville Union High School Dist., plans by Koblick & Fisher, 2203 12th St., Sacramento, 4 classrooms and music room addn. to Vacaville High School. **$400,000.**

▲ **Colo., Boulder**—ENGINEERING—University of Colorado, Campus, engineering bldg. addns. **$2,000,000.**

▲ **Colo., Boulder**—PHYSICS, etc.—University of Colorado, Campus, physics bldg. addn., **$518,000**; law school bldg., **$850,000**; warehouse and garage bldg., **$650,000**; CU stadium addns., 100,000 sq. ft. office and shop space, **$473,000.**

Conn., Danbury—SCHOOL—Town, elementary school, Camp Ave. **$400,000.**

Conn., Hartford—MUSEUM—City plans by Kane & Fairchild, 734 Asylum Ave., children's museum, Elizabeth Park. **$500,000.**

▲ **Conn., Monroe**—SCHOOL—Town constr., Junior & Senior High School, Route 111, **$1,000,000.**

▲ **Conn., New Haven**—SCHOOLS—Town constr., Dwight-Webster Elementary School, **$975,000**; Fair Haven Heights Elementary School, **$400,000.**

Conn., Stamford—HIGH SCHOOL—Town of Stamford, constr. Junior High School, Roxbury Rd. **$900,000.**

▲ **Conn., West Hartford**—SCHOOL—Town, Bd. Educ., 51 Memorial Rd. Wolcott Elementary Scool, **$1,250,000.** CD 11/23, under LB.

▲ **Conn., West Hartford**—SCHOOL—Town, Braeburn Rd., elementary school. **$1,750,000.**

▲ **Fla., Miami Beach**—EXHIBITION HALL—City, C. A. Renshaw, mgr., City Hall, Washington St.; plans by R. Robert Swartburg, 126 24 St., 1 story, 195,000 sq. ft. air conditioned exhibition bldg., Washington Ave. north of Municipal Auditorium, **$3,500,000.** Oboler & Clarke, 927 41 St., struc. engr. Henry J. Nelson, 1101 Lincoln Rd., mech. engrs. Mr. Brodes, city engr. CD 5/15.

Ill., Chicago—SCHOOL—Bd. Educ., 228 N. La Salle St., New Skinner Branch Elementary School, 1070 W. Jackson Blvd. **$400,000.**

Ill., Chicago—SCHOOL—Bd. Educ., 228 N. LaSalle St., plans by Consoer & Morgan, 351 E. Ohio St., 2 story, brick Mosley school, south side. **$500,000.**

Ill., Chicago—SCHOOL—Bd. Educ., 228 N. LaSalle St., plans by Skidmore, Owings & Merrill, 100 Monroe St., 2 story, John Joseph Pershing Elementary School, 31 St. and Cottage Grove. **$450,000.** CD 12/1.

Ind., Decatur—HOSPITAL—Bd. Trustees Adams County Memorial Hospital plans by A. M. Strauss, Inc., Strauss Bldg., Ft. Wayne, Hospital imprvs: remodel present bldg., add several new rooms. **$400,000.** Construction this fall. CD 1/24.

Kan., Hays—STUDENT UNION—F. Hays State College, student union bldg. **$500,000.** CD 10/26, under LB.

Kan., Manhattan—TESTING LABORATORY—Kansas Highway Comm., Topeka, plans by Dwight Brown, state archt., State House, Topeka, highway testing laboratory, **$350,000.**

Md., Baltimore—AUDITORIUM, etc.—Coppin State Teachers College, W. North Ave., auditorium and gymnasium bldg. **$493,000.** CD 12/5/50.

Md., Bowie—LIBRARY—State of Md. Bowie State Teachers College, library bldg., **$392,000.**

Md., Frostburg—DEMONSTRATION SCHOOL, etc.—State of Md., Frostburg State Teachers College, demonstration school bldg., **$500,000**; dining hall and students union bldg., **$422,000.**

Md., Towson—DORMITORY—State, State Bd. Educ., Annapolis, girls dormitory, Towson State Teachers College, **$550,000.** CD 12/7/50.

▲ **Mass., Arlington**—SCHOOL—Town, School Dpt., 23 Maple St., plans by Korslund, LeNormand & Quann, Inc., 506 Washington St., Norwood, Senior High School addn., alterations. **$1,716,500.** CD 12/2.

Mich., Clawson—SCHOOL—City, Bd. Educ., Clawson Public Schools, 101 John M St., plans by Clair W. Ditchy, 605 West 11 Mile Rd., Royal Oak, Parkland Elementary School and new elementary school, Berner and Boschma Sts. **$350,000.** CD 3/7.

▲ **Mich., Ecorse**—HOUSING—Ecorse Housing Comn., Robert F. Johnson, dir., Ecorse, William W. Voisne Terraces, 100 brick housing units. Salliotte, Visger, Eighth Sts., and N. Y. C. R. R. **$1,441,562.** CD 3/14/50.

Mich., Port Huron—HEALTH—St. Clair Co. Bd. Supervs., Court House, plans by Wyeth & Harman, 1602 Military Ave., public health bldg., civic center, **$500,000.** Bids in October. CD 6/3/53.

▲ **Minn., Minneapolis**—DORMITORY—University of Minnesota, 404 Admin. Bldg., plans by Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, men's dormitory on main campus. **$2,500,000.** Bids in March, 1957. CD 12/23/55.

Mo., St. Charles—HOUSING—St. Charles Housing Authority, City Hall, 20 bldgs. 1 and 2 story 48 apartments in 4 block area southeast of Blanchette Park. **$717,148.** CD 5/8.

▲ **Neb., Columbus**—HIGH SCHOOL—Bd. Educ. plans by Davis & Wilson, 225 Stuart Bldg., Lincoln, Senior High School, **$1,500,000.** Bids asked about August 15. CD 11/11/55.

Neb., Johnson—SCHOOL—Bd. Educ. plans by Clark & Enersen, 1415 Sharp Bldg., Lincoln, school addn., **$345,000.** CD 6/27.

Neb., Nebraska City—PLANT BLDG.—Chamber of Commerce, plant bldg. **$100,000.**

Neb., Omaha—SCHOOL—Bd. Educ. plans by C. A. Martin, 503 Karbach Bldg., addition and heating plant at Benson West School, 6652 Maple St. **$400,000.**

Neb., Shelby—SCHOOL—Bd. Educ., defeated **$550,000** bonds July 24, school. CD 7/23.

N. J., Atlantic City—HOUSING—Atlantic City, N. J. Housing Auth., 2311 Fairmount Ave., housing **$500,000.**

N. J., Franklin Twp.—SCHOOL—Bd. Educ., Franklin Township, plans by Micklewright & Mountford, E. Stuyvesant Ave., Trenton, school, Elizabeth Ave, Middlebush. **$500,000.**

▲ **N. J., Westwood**—SCHOOLS—Bd. Educ., Westwood, plans by Ira Davey, 8 Depot Sq., South Englewood, present high school addn., 158 Third Ave., Washington Twp. **$525,000**; elementary school on Pascack Rd. and School St., Washington Twp. **$849,000**; parking area adjoining school in Westwood. **$75,000.**

N. M., Aztec—HOSPITAL WING—San Juan Co. Hospital, chronic wing for hospital. **$600,000.**

▲ **N. Y., Middletown**—SCHOOL—Bd. Educ., 159 Prospect St., plans by Robert A. Green, Tower Hill, N. Tarrytown, Junior High School. **$2,000,000.**

N. Y., Middleton—LIBRARY, etc.—Orange Community College, plans by Robert A. Green, Tower Hill N., Tarrytown, 3 story library bldg. and 2 story student union bldg. **$500,000.**

N. Y., Valhalla—SCHOOL—Bd. Educ. plans by Robert A. Green, Tower Hill N., Tarrytown, elementary school. **$470,000.**

▲ **N. C., Chapel Hill**—DORMITORIES—University of North Carolina, Chapel Hill, 4 men and women's dormitories, **$2,000,000.**

N. C., Cullowhee—DORMITORY—Western Carolina Teachers College, Cullowhee, men's dormitory, **$475,000.**

O., Benton—HIGH SCHOOL—East Holmes Local School Dist., bond election Nov. 6, for high school and other facilities. **$528,000.**

O., Franklin—SCHOOL—Bd. Educ. cancelled Nov. 6 bond election school. **$390,000.** CD 7/26.

O., Hamilton—JAIL—Comrs. Butler Co., Court House, bond election Nov. 6, new county jail. **$750,000.**

Pa., Conshohocken—SCHOOL—Conshohocken School Dist., plans by Davis & Dunlap, 117 S. 17 St., elementary school, 3 and Harry Sts., **$425,000.** Keast & Hood, 2031 Chestnut St., consult. engrs. CD 11/17.

Pa., Coraopolis—SCHOOL—School Dist. of Coraopolis, plans by Glenn Bickerstaff, 1311 Investment Bldg., Pittsburgh, 1 and 2 story, bsmnt., brick, block, steel, JUNIOR and Senior High School addn. **$700,000.**

▲ **Pa., Harrisburg**—SCHOOL—Harrisburg School Bd., 121 Chestnut St., new school bldg. vicinity Verbeke and Wallace Sts. **$1,000,000.** CD 5/31/49.

Pa., Phila—CHILDRENS SHELTER—Phila. Procurement dept., City Hall Annex, plans by Bellante & Clauss, 1810 Rittenhouse Square, childrens shelter, 1823 Callowhill St. **$344,000.**

▲ **Pa., Westtown**—SCHOOL—West Chester Joint High School Bd., 320 Church St., Junior High School. **$1,000,000.**

R. I., Warren—SCHOOL—Town Comn., plans by William O'Rourke, 90 Union St., high school, Childs St., **$400,000.** CD 12/18 52.

Tex., Ft. Worth—SCHOOL—Ed. P. Williams, bus. mgr. Ft. Worth Public Schools, 3210 W. Lancaster St., plans by Robert P. Woltz, Jr., 1030 7th Ave., 1 story, masonry, concrete, tile, Carter Park Elementary School, 1216 E. Broadus. **$448,500.** CD 4/13.

▲ **Tex., Houston**—JUVENILE PROBATION HOME—Harris Co., Court House, Houston, voted bonds July 28, Juvenile-Probation Home. **$1,000,000.** Frank Baldwin, c/o owner, dir. P. Wks. Utilities Eng. CD 6/11.

Tex., Mercedes—SCHOOL—Mercedes Independent School Dist., Mercedes, plans by Wm. C. Baxter, Pioneer Bldg., Weslaco, brick, masonry elementary school. **$400,000.** CD 10/7.

Tex., Pharr—SCHOOL—Pharr-San Juan-Alamo Independent School Dist., voted bonds July 21, Elementary School No. 1, **$425,000**; Elementary School No. 2, **$525,000.**

Tex., Plains—SCHOOL—Plains Independent School Dist. plans by Haynes & Kirby, 102 Dixie Dr., Lubbock, school. **$350,000.**

▲ **Tex., San Angelo**—AUDITORIUM-COLISEUM—City, City Hall, plans by Mauldin and Ballard & Assocs., Phillips Talley Bldg., San Antonio, auditorium-coliseum, **$1,000,000.** CD 7/10.

Wash., Puyallup—SCHOOL—School Bd., bond election Nov. 6, for gymnasium addn. to high school, **$540,300.** CD. 5/24.

Wis., Sturgeon Bay—COURTHOUSE—Door Co. plans by Foeller, Schober, Berners, Safford & John, 310 Pine St., Green Bay, courthouse addn. **$450,000.**

Wis., Watertown—GRADE SCHOOL—Bd. Educ., plans by Durrant & Berquist, 666 Loras Blvd., Dubuque, Iowa, grade school. **$400,000.**

Wis., Wisconsin Rapids—SCHOOL UNIT—Bd. of Vocational & Adult Education, plans by Donn Hougen, 132 E. Grand Ave., shop unit at Vocational School. **$325,000.** Bids next winter.

Wyo., Cheyenne—POLICE DEPT., etc.—City, City-County Bldg., bond election Aug. 14, police dept. bldg. and jail. **$300,000.**

Alta., Edmonton—TELEPHONE—Alberta Government Telephones, Parliament Bldg., 3 story, rein. con. telephone bldg. addn., 102 Ave. between 100 and 101 Sts. **$600,000.**

COMMERCIAL BUILDINGS

▲ **Ala., Birmingham**—SUPERMARKET—Fred Montesi, 165 Cherokee Dr., Memphis, Tenn., supermarket. **$1,000,000.**

▲ **Calif., Boyes Springs**—HOMES—James E. Roberts, c/o Gifford E. Sobey, archt., 123 W. Main St., Los Gatos, 200 home subdivision Sonoma Bel Air. **$2,800,000.**

Calif., Sunnyvale—APARTMENT—Owner, c/o Stanley Mattson, archt., 650 San Antonio Rd., Mt. View, 100-unit 2 story, frame, stucco apartment house with swimming pool. **$400,000.**

Colo., Denver—APARTMENT—Edwin Miller, c/o Toll & Milan, archts., 648 Sherman St., concrete "Y" shape, 42 unit apartment. **$500,000.** Henry J. Boland, 650 Sherman St., consult. engr.

▲ **Colo., Denver**—DORMITORY—University of Denver, Campus, plans by Edwin A. Francis, consult. engr.-archt. 218 E. Speer Blvd., dormitory to provide for 200 men and 200 women and dining area to seat 400. **$1,500,000.**

▲ **Conn., Bristol**—HOUSE DEVELOPMENT—Cedar Park, Inc., Stafford Ave., 54 house development, Sherman Park. **$1,395,000.**

Conn., Ellington—HOUSE DEVELOPMENT—Ellington Estates, Middle Butcher Rd., 33 house development, Ellington Estates, Middle Butcher Rd. **$494,670.**

▲ **Conn., Milford**—SHOPPING CENTER—Sol G. Atlas, 6 J. Mal. Wk., Yonkers, N. Y., shopping center incl. 60-stores, Boston Post Road, and 5,200 vehicle parking area. **$20,000,000.**

Conn., South Windsor—HOUSING—Strathmore, Inc., Kelly Rd., 33-house development. **$544,500.**

Conn., Suffield—PARISH HOUSE—First Church of Christ Cong., 188 Main St., plans by A. George Mallis, Boston Neck Rd., 2 story, 40x80 sq. ft. masonry, steel parish house. **$345,000.**

Conn., Wallingford—MOTEL, etc.—Wilbur Cross Motel, Inc., N. Ridgeland Rd., plans by Carl Koch & Assoc., 55 Brattle St., Cambridge, Mass., 1 and 2 story, 60 unit motel, 1 story, 100 capacity restaurant. **$400,000.** CD 7/26.

Conn., Wethersfield—SHOPPING CENTER—Richard D. Wolf, 64 Pearl St., Hartford, plans by Rossetti & DeCorcia, 105 Main St., Bristol, 5 store shopping center, incl. supermarket, 250-car parking lot, Jordan La. and Silas Deane Hy. **$350,000.** John P. Legnos, 30 Gillette St., Hartford, consult. engr. Robert W. Loomis, 32 Maple Ave., Windsor, owners engr. CD 7/6.

Conn., Wethersfield — CHURCH — St. Paul's Lutheran Church, Rev. John C. Allan, pastor, plans by Carl E. Segerberg, 363 Main St., Middletown, church, Wolcott Hill Rd., and Westway. **$350,000.** Construction 1957.

Del., Wilmington—SCHOOL, etc.—St. John the Beloved R. C. Church, Sherwood Park, plans by Edward J. Scullen & Assocs., and F. Leonard Slagle, 10105 Renfrew Rd., Bethesda, Md., school-temporary church and parish hall. **$344,000.**

Fla., Palm Beach—APARTMENT—Owner, c/o B. N. Whinston, archt., 780 Third Ave., New York 17, N. Y., apartment North Country Rd. between Atlantic and Everglade Ave. **$375,000.**

▲ **Ill., Chicago**—OFFICE—500 N. Michigan Ave. Bldg. Corp., Benjamin F. Sherman & Son, agt., 100 N. La Salle St., 18 story office bldg., land area 100x165 ft. **$5,000,000.**

▲ **Ill., Chicago**—EXPOSITION, etc.—Chicago Park Fair Corp., c/o Major Lohr, Museum of Science & Industry, plans by Shaw, Metz & Dolio, 208 S. LaSalle St., exposition bldg., amphitheatre, parking, paving, etc. **$34,200,000.** Ralph H. Burke, 20 N. Wacker Dr., consult. engr.

Ill., Chicago—FUNERAL CHAPEL—Lain & Son, Inc., 316 W. 63rd, plans by Naess & Murphy, 80 E. Jackson Blvd., 1 and 2 story funeral chapel, 1031 39 N. Dearborn St. **$400,000.**

Ill., Chicago—APARTMENT—Owner, c/o Hirschfeld & Pawlan, archts., 327 S. LaSalle St., 7 story apartment, Belden and Commonwealth Ave. **$1,400,000.**

Ill., Chicago—CHURCH—St. Lukes Evangelical Lutheran Church, 1500 W. Belmont Ave., plans by Harold A. Stahl, 310 N. Michigan Ave., church. **$500,000.** CD 6/14/46.

▲ **Ind., Gary**—SCHOOL—Gary Deanery of Roman Catholic Church, 501 W. Ridge Rd., plans by Raymond S. Dastendieck, 673 Broadway, parochial high school, 61st and Broadway. **$2,500,000.** CD 2/15.

Ind., Gary—SHOPPING CENTER—Manta & Hurst, 3609 Main St., East Chicago, plans by Grugel Assocs., 244 S. Cicero Ave., Chicago, 15 unit shopping center and supermarket, 22nd and Virgina. **$400,000.**

Ind., Southport—HIGH SCHOOL—Perry Twp. School Trustees plans by McGuire & Shook, 1400 Fletcher Trust Bldg., Indianapolis, 2 story, 68x118 ft. rein. con., struc., steel, masonry Senior High School addn., class rooms, cafeteria. **$350,000.**

▲ **Mass., Boston**—DORMITORY—Boston University, 755 Commonwealth Ave., women's dormitory, Bay State Road Campus. **$2,000,000.**

Mass., Cambridge—DORMITORY—Radcliff College, 10 Garden St., plans by Perry, Shaw, Hepburn & Dean, 31 St. James Ave., Boston, 3 story, masonry dormitory wing addn. **$350,000.** Constr. 1957. CD 4/21/55.

Mass., Fitchburg—SCHOOL—Sisters of the Presentation, 2 story private elementary school, 366 South St., to be run in conjunction with Coeli College. **$500,000.**

Mass., Newton—HOSPITAL—Newton-Wellesley Hospital, 2014 Washington St., plans by James H. Ritchie & Assoc., 135 Clarendon St., Boston, hospital addn., alterations. **$344,000.**

Mass., Springfield—HOSPITAL—Springfield Hospital, 759 Chestnut St., plans by James H. Ritchie & Assoc., 135 Clarendon St., Boston, hospital addn., alterations, Chestnut St. **$344,000.**

▲ **Minn., Little Falls**—SHOPPING CENTER, etc.—L. A. Maier, 3217 Micollet Ave., Minneapolis, shopping center, housing development, 15 or 20 units, on U. S. Hy. No. 10. **$1,000,000.**

Mo., St. Louis—COMMUNITY CENTER—Eastern Orthodox Church Federation of St. Louis, John L. Mavrokos, chmn., Bldg. Comm., c/o St. Nicholas Greek Orthodox Church, 4967 Forest Park Blvd., Zone 8, plans by Kenneth E. Wischmeyer, Bd. Educ. Bldg., 911 Locust St., Zone 1, combination gymnasium and community center, 4967 Forest Park Blvd. **$300,000.** CD 4/4/55.

Mo., St. Louis—HEADQUARTERS—Lutheran Laymen's League, 3558 S. Jefferson Ave., Zone 18, plans by Kenneth F. Wischmeyer, Bd. Educ. Bldg., 911 Locust St., Zone 1, headquarters bldg., Hampton and Elizabeth Aves. **$400,000.** CD 7/13.

Neb., Grand Island—ACADEMY—Nebraska Lutheran Academy, Grand Island, academy, **$500,000.**

Neb., Lincoln—EDUCATIONAL CENTER—College View Seventh-Day Adventist Church, 4015 S. 49 College View Dist., educational center, 52nd and Calvert Sts. **$350,000.**

N. J., Ventnor—APARTMENTS—Norman Liebling, 115 S. Osborne Ave., 10 story, 107x125 sq. ft. masonry, glass, steel apartment. **$750,000.**

N. Y., Brooklyn—APARTMENT—Joseph Silverman, c/o Joseph S. Riggio, archt., 120-44 Queens' Blvd., New Gardens, 109 family apartment, 2240-50 Plumb First St. **$960,000.**

▲ **N. Y., New York**—APARTMENT—Manhattantown, Inc., 395 Central Park West, plans by S. J. Kessler & Sons, 551 Fifth Ave., 16 story apartment, 125 W. 97 St. **$1,717,000.**

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WHEN YOU WANT IT

O., Bainbridge—SCHOOL—Bd. Educ., Paint Valley School Dist., Bainbridge, voted $402,000 bonds July 24, high school. **$850,000**. Howard & Thos. McClorey, 3002 Woodburn St., Cincinnati, archts. To go ahead in October.

O., Canton—CHURCH, etc.—Zion Lutheran Church, 901 Dueber S. W., plans by Marr, Knapp & Crawfis, 138 Ray Ave. N. W., New Philadelphia, church and educational bldg. on 3-acre site, 7th and Raff Rds. S. W. **$520,000**.

O., Cleveland—HOSPITAL—State Dpt. Mental Hygiene, Dr. John D. Porterfield, dir., State Office Bldg., Columbus, plans by Rudolph J. Tichy, The Arcade, Zone 14, remodeling Marine Hospital on Fairhill Rd. as regional treatment center mental hospital, 3 boilers, remodel nurses' home into outpatient dept., rebuilding insides of main bldg. **$410,000**.

▲ **O., Dayton**—SHOPPING CENTER—Williams Investment Co., c/o James R. Williams, Union Trust Bldg., Cincinnati, 220,000 sq. ft. brick, stone shopping center, thirty 1 story stores, Airway Rd. and planned Woodman Dr. **$2,500,000**. Constr. to start early in 1957.

O., Wheelersburg—SCHOOL—Local School Dist., Wheelersburg, plans by Howard & Thos. McClorey, 3002 Woodburn Ave., Cincinnati, high school, **$750,000**. To go ahead in October.

Okla., Sand Springs—HOUSING—R. O. Sharp, Sand Springs, 63 housing unit development on Rockhill Addn. **$945,000**. W. J. Crow, Sand Springs, engr.

Pa., Lansdale—HOME—Lutheran Welfare Service, Rev. Elwood W. Reitz, Perkasie, Home for the Aged. **$500-000**.

Pa., Levittown—SCHOOL—R. C. Archdiocese of Phila., 225 N. 18 St., Phila., plans by Edwin J. Flemming, North Wales, auditorium, convent, rectory and school for Queen of the Universe R. C. Church. **$343,000**. Paul Kopf, 1321 Arch St., Phila., engr. CD 10/13.

Pa., Phila.—DORMITORY—University of Pa., College Hall, 34 St. and Woodland Ave., revised plans by Carroll Grisdale & Van Alen, 204 W. Rittenhouse Square, law school dormitory bldgs. **$750,000**. Severud, Elstad & Krueger, 415 Lexington Ave., N. Y., consult. engrs. Bids 6/5 rejected. CD 6/15, under LB.

Pa., Springfield—HOTEL, etc.—Samrus Corp., c/o Jacques Fox, 7020 Garrett Rd., Upper Darby, plans by Philip Mastrin, Towne Bldg., Phila., 2 story U shaped masonry 64 suite hotel and restaurant, 2 parking areas, Baltimore Pike. **$750,000**.

▲ **Tex., Amarillo**—DWELLINGS—Boston Development Co., J. D. Boston, 3410 Lamar, 40 dwellings, **$360,-000**; 42 dwellings, **$378,000**; 36 dwellings, **$378,000**; 33 dwellings, **$346,500**; 35 dwellings, **$350,000**, off S. Manhattan, 27th Ave., S. Osage and 19th Sts.

▲ **Tex., Austin**—SHOPPING CENTER—Northway Crest Development, Inc., c/o S. Rebb, c/o Fehr & Granger, archts., 502 E. 5th St., shopping center between N. Lamar Blvd. and Guadalupe St. **$5,000,000**.

Tex., Beaumont—MOTEL—Ray Gilliam, c/o Castle Motel, 125 room motel unit. **$800,000**.

Tex., Bryan—SHOPPING CENTER—Cecil Culpepper & C. Hoppess, 206 E. 25th St., plans by Milam & Roper, 368 Sasa Linda Plaza, Dallas, 100,000 sq. ft., brick, steel struc. shopping center. **$750,000**.

▲ **Tex., Dallas**—DWELLINGS—Longhorn Constr. Co., 9620 John West Road, 25 dwellings, **$375,000**, 18 dwellings, **$350,500**, 16 dwellings, **$361,410**, 22 dwellings, **$366,825**; 20 dwellings, **$355,000**; 24 dwellings, **$369,200**.

Tex., Dallas—EDUCATION—Wilshire Baptist Church, 4316 Abrams Rd., plans by Mallory Collins, 2921 Fairmount, 3 story, bsmnt. education bldg. **$359,000**.

Tex., El Paso—DWELLINGS—S&W Constr. Co., 503 Hunter Rd., 56 concrete slab, brick, Hueco stone dwellings, Clardy-Fox subdivision. **$448,000**.

Tex., El Paso—EDUCATIONAL—Temple Mount Sinai, 900 N. Oregon St., plans by S. Eisenstadt, Los Angeles, Calif. and Carroll & Daeuble, 1001 E. Yandell, masonry educational. **$500,000**.

▲ **Tex., Ft. Worth**—TRAINING SCHOOL, etc.—American Airlines, c/o M. Mosier, vice pres., Carter Airport, plans by Wyatt C. Hedrick Co., 1200 T&P Bldg., 2 story U shaped native stone Stewardess Training School, on access road to Carter Airport, air-conditioned, swimming pool, etc. **$1,000,000**.

Tex., Fort Worth—ASTRONOMICAL—Texas Christian University, c/o Dr. M. E. Sadler, pres., University Dr., Fort Worth, plans by Joseph R. Pelich, 1203 Comm. Std. Bldg. 1 story, masonry astronomical bldg., TCU campus. **$200,000**.

▲ **Tex., Houston**—DWELLINGS—Fidelity Development Co., c/o Jack French, 3625 Fannin St., 22 dwellings, **$361,000**; 18 dwellings, **$349,410**; 26 dwellings, **$370,000**, in Windsor Village.

Tex., Houston—SCHOOL—Harry F. Plackemeier & Assocs., trustees for Missouri Synod Lutheran Church Mission Bd., 5842 Southford St., North Side Lutheran High School, 11½ acres Tidwell and Bauman Rds. **$400,000**.

▲ **Tex., Houston**—DWELLINGS—Prokop Constr. Co., Inc., 6903 Long Point, Houston, Tex., 30 dwellings, **$355,475**; 27 dwellings, **$372,100**; 23 dwellings, **$361,160**; 21 dwellings, **$347,700**; 33 dwellings, **$376,000**, in Windsor Village.

Tex., Houston—APARTMENT—N. R. Wall Realty Co., 1724 Bissonnet, plans by Kenneth C. Clark, 1724 Bissonnet, 78 unit apartment, 1800 blk. Old Spanish Trail. **$750,000**.

▲ **Tex., Houston**—DWELLINGS—Paul H. Wolf Constr. Co., 2418 W. Alabama St., Houston, 23 dwellings, **$369,700**; 17 dwellings, **$348,000**; 19 dwellings, **$362,225**, in Windsor Village.

Tex., Hurst—SHOPPING CENTER—Doss, Blackman & Assoc., Mineral Wells, plans by R. Burnett & Assoc., 200 Burnett St., Ft. Worth, 46,000 sq. ft. masonry shopping center, struc. steel roof, etc. **$375,000**.

▲ **Tex., Irving**—DWELLINGS—M. C. Andrews, Jr., Builder, Grand Prairie, 30 dwellings, **$373,500**; 28 dwellings, **$369,050**; 26 dwellings, **$361,000**; 25 dwellings, **$348,400**; 32 dwellings, **$345,000**; 253-acre tract off Wingren and O'Connor Rds.

Tex., Lake Jackson—DWELLINGS—Howard Terry, Contractor, 34 dwellings, **$378,500**; 37 dwellings, **$391,-000**, in Plantation Dr. area.

Tex., Lubbock—SCHOOL—Lubbock Christian College, admin. classrooms, laboratory bldg. **$350,000**.

Tex., McAllen—MEDICAL—Dr. H. E. Whigham plans by John G. York, 1204 S. 15th St., Harlingen, 67,000 sq. ft. masonry medical bldg. **$575,000**.

▲ **Tex., Mesquite**—SHOPPING CENTER—Big Town Corp., c/o Gerri Von Frelich, Equitable Bldg., Denver, Colo. or c/o Erben Realty Co., Texas Bank Bldg., Dallas, shopping center, **$10,000,000**. Starting work within 36 months. CD 5/4/56.

▲ **Tex., Pampa**—DWELLINGS—Hughes Development Co., Pampa, 29 dwellings, **$372,125**, 27 dwellings, **$354,150**; 23 dwellings, **$346,000**.

▲ **Tex., San Antonio**—MEDICAL CENTER—Southwest Texas Methodist Hospital Bd., c/o Dr. Harold Vagtborg, chn., Chamber Commerce Committee, 3500 Culebra Rd., medical center (Methodist) 200 acres between Babcock and Fredericksburg Rd. **$5,500,000**.

Tex., San Marcos—HOSPITAL—Soldiers & Sailors Memorial Hospital, hospital. **$350,000**.

Wash., Spokane—DORMITORY—Gonzaga University, E. 502 Boone, 4 story, rein.-con. men's dormitory. **$720,000**. Bids this fall.

N. B., St. John—OFFICE—United 5c. to $1.00 Stores of Canada Ltd., 860 Cote de Liesse Rd., Montreal, Que., plans by Greenspoon, Freedlander & Dunne, 4151 Sherbrooke St. W., Montreal, Que., 4 story, bsmnt., 8,500 sq. ft., rein.-con. office, Charlotte St. **$350,000**. Pierre M. D'Allemagne, 3180 Van Horne Ave., Montreal, Que., engr.

▲ **Ont., Toronto**—APARTMENT—Beaverdell Investments Ltd., 221 Victoria St., plans by Bregman & Hamann, 7 Adelaide St. E., 13 story, bsmnt., masonry, steel concrete apartment, 147 units, Rose Ave. at Howard St. **$1,173,000**.

Ont., Toronto—APARTMENT—Canterbury Gardens, Ltd., 347 Bay St., plans by Bregman & Hamann, 7 Adelaide St., 10 story, penthouse, 143 unit, masonry, steel, rein.-con. apartment, basement parking, Jarvis St. north of Gerrard St. E. Toronto. **$1,144,000**.

Ont., Toronto—APARTMENT—Owner, c/o Bregman & Hamann, 7 Adelaide St., 10 story, 60x75 ft. steel, brick apartment, basement parking, St. George and Harbord Sts. **$400,000**. Parkas & Barron of Canada Ltd., 7 Adelaide St. E., consult. engr.

▲ **Ont., Toronto**—SHOPPING CENTER—Owner c/o Bregman & Namann, archts., 7 Adelaide St. E., 180,000 sq. ft. shopping center, 30,000 sq. ft. office 2nd floor level, 25,000 sq. ft. supermarket, 6,000 sq. ft. of mezzanine, 1,400 car parking, Scarborough. **$2,000,000**. Parks & Barron of Canada Ltd., 7 Adelaide St. E., consult. engrs.

▲ **Que., Drummondville West**—CONVENT—Rev. Soeurs de la Presentation de Marie, Sherbrooke, plans by Paul Labranche, 165 Heriot St., convent, at Drummondville West. **$1,000,000**.

▲ **Que., Montreal**—BUNGALOWS—Bonaventure Investment Co., 5950 Cote des Neiges Rd., plans by David Reich, 5810 St. Luc Rd., 300 bungalows, Levesque Blvd., St. Vincent De Paul. **$4,500,000**.

Que., Montreal—HOUSING PROGRAM—N. Galland, 5247 Glober St., 22 duplexes houses Leon Derome and Desrosiers Sts. **$400,000**.

INDUSTRIAL BUILDINGS

Conn., Hartford—PLANT—Fox Press, Inc., 206 State St., plans by Philip J. DiCorcia, 80 Elizabeth St., printing plant. **$100,000**. Robert W. Loomis, 32 Maple Ave., Windsor, consult. engr. Fred S. Dubin & Assocs., 178 S. Whitney St., owners' engrs. CD 4/20.

Conn., Litchfield—SERVICE, etc.—Conn. Light & Power Co., 25 Maple St., Naugatuck, plans by Leo F. Caproni, 1221 Chapel St., New Haven, office and service bldg. **$100,000**.

▲ **Conn., New Haven**—MANUFACTURING—Conn. Adamant Plaster Co., 10 River St., mfg. bldg. at existing plant. **$1,500,000**.

Conn., Shelton—FACTORY—A. H. Nilson Co., 1525 Railroad Ave., Bridgeport, plans by Fletcher, Thompson, Inc., archt.-engr., 211 State St., Bridgeport, 1 story, 40,000 sq. ft. factory bldg., Route 8, Wells Hollow, **$400,000**.

Conn., Windsor Locks—TESTING—United Aircraft Corp., Hamilton Standard Div., Bradley Field, bldg. for testing jet engines, **$100,000**.

▲ **Fla., St. Petersburg**—PLANT—Minneapolis Honeywell Regulator Co., 2743 Fourth Ave., S. Minneapolis, Minn., plans by Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, plant to produce a new type of aeronautical navigation system, **$4,000,000**. CD 7/30.

▲ **Ga., Macon**—PLANT—The Weston & Brooker Co., Cayce St., Columbia, S. C., stone crusher plant on 300-acre site, Macon-Milledgeville Rd., 9 mi. northeast of here. Over **$1,000,000**.

▲ **Mo., Louisiana**—PLANT—Hercules Powder Co., Delaware Trust Bldg., Wilmington, Del., and Imperial Chemical Industries, Ltd., Imperial Chemical House, Millbank, London SW 1, England, plant to mfg. methyl methacrylate, 36 million lb. annual capacity, 20 acre site. **$11,000,000**.

▲ **Neb., Kearney**—PLANT—Kearney Civil Development Corp., 180,000 sq. ft. floor area construction plant bldg. **$2,000,000**. Rockwell Mfg. Co. of Pittsburgh, Pa., lessee.

N. H., Dover—SERVICE—Brodhead Ford Sales, 120 Washington St., plans by Willis E. Littlefield, 339 Central Ave., 7,500 sq. ft. service bldg. **$100,000**.

N. J., Secaucus—WAREHOUSE—Harold M. Pitman, 1110 13 Ave., Union City, plans by John Scacchetti, 415 32 St., Union City, warehouse, 515 Secaucus Rd. extension, **$250,000**.

N. J., Secaucus—STORAGE PLANT—Pyramid Motor Freight Co., 381 West St., New York, N. Y., plans by Lawrence Klein, 17 Academy St., Newark, storage plant, County Ave., **$250,000**.

N. Y., Buffalo—PLANT—Harry Hoffman & Sons Co., 470 Franklin, 1 story, 35,000 sq. ft. brick plant, 985 Jefferson Ave. **$300,000**.

N. Y., New York—GARAGE—117 Operating Corp., 163-18 Jamaica Ave., Jamaica, plans by Lama, Proskauer & Prober, 395 Pearl St., Brooklyn, public garage, 117-27 E. 59th St. **$140,000**.

O., Middletown—GRAPHIC ARTS CENTER—Yoder Engraving Co., Bruce Martin, pres., Middletown, (1) 13,250 sq. ft. (2) 9,000 sq. ft. brick graphic arts center to make retogravure and letter press photoengravings, 6 acre tract, S. Verity parkway, near city limits. **$800,000**. Constr. in the Fall.

Pa., Berwyn—WAREHOUSE, etc.—American Brass Co., 111 W. Norris St., 1 story, 40x160 ft. office, and 150x300 ft. warehouse masonry constr. **$750,000**.

Pa., Parkland—PLANT, etc.—Eastern Coating Co. of Phila., 3303 Richmond St., mfg. plant, warehouse, office bldg. and railroad siding. **$250,000**.

Pa., Springfield—GARAGE, etc.—Phila. Suburban Water Co., 762 Lancaster Ave., Bryn Mawr, 19x180 sq. ft. garage, 1 and 2 story, 24x100 sq. ft. masonry, brick, steel office bldg., 24x60 sq. ft. metershop, **$335,470**. J. W. Myers, c/o owner, engr.

▲ **Pa., Wellsboro**—PLANT—Dresser Mfg. Div. of Dresser Industries, Inc., Republic National Bank Bldg., Dallas 21, Tex., approx. 100,000 sq. ft. plant. **$1,000,000**. Completion by early 1957.

▲ **Tex., Amarillo**—PLANT, etc.—Borden Co., c/o Chas. Young, 609 Grant St., creamery plant, **$1,100,000**; service and parking garage, **$100,000**.

▲ **Tex., El Paso**—BREWERY—Falstaff Brewing Corp., 902 Live Oak, Houston, brewery expansion. **$1,750,-000**. CD 4/24.

▲ **Tex., Galveston**—BREWERY—Falstaff Brewing Co., 902 Live Oak, Houston, brewery expansion. **$3,000,-000**. CD 3/9.

▲ **Wash., Bellingham**—KILN—Olympic Portland Cement Co., Ltd., 11x400 ft. cement kiln. **$1,500,000**.

Wis., Belleville—FACTORY—Federal Freezer Co., Belleville, plans by G. Lippert, 5113 Tonyawatha Trail, Madison, 1 story, 150x200 and 50x100 concrete, concrete blocks, steel, factory addn. **$350,000**.

Alta., Edmonton—REFINERY—British American Oil Co., Ltd., Toronto, Ont., oil refinery expansion and improvement and catalytic reformers. **$750,000**.

Alta., Edmonton—PLANT—Monsanto Canada Ltd., 425 St. Patrick St., Ville La Salle, Box 900, Montreal 32, Que., plant near Alta, for manufacture of synthetic resin. **$100,000**.

Ont., Chatham—FACTORY—James Cornhill Sons Ltd., 9 Stanley St. E., reconstructing factory, destroyed by fire. **$100,000**.

Ont., Kitchener—PLANT—B. F. Goodrich Canada Ltd., 251 King St. W., plant addn. **$400,000**.

Ont., St. Thomas—PLANT—The Richier Machine Co. Ltd., head office, 20 Vernier St., Paris, France, plans by J. Fred Green, 544 Talbot St., plant, 77 acre site in northeast section of city. **$500,000**.

▲ **Ont., Windsor**—INDUSTRIAL AREA—Canadian Rock Salt Co. Ltd., 625 Dorchester St. W., Montreal, Que., industrial area development, incl. port facilities both sides of Hy. 18. Over **$50,000,000**.

UNCLASSIFIED

▲ **Miss., Pascagoula**—WHARVES, etc.—Jackson Co., Pascagoula, voted **$2,000,000** bonds July 28, construct wharves, piers, docks, ways, warehouses, roadways and water terminal on Pascagoula River. CD 5/19/55.

▲ **Missouri**—GAS LINES—Missouri Natural Gas Co., N. K. Jones, vice pres., Farmington, 10 mi. 8- and 10-in. pipe line to serve natural gas to DeSoto, Herculaneum, Hematite, Pevely and Horine, Mo., incl. Mallinckrodt Chemical Co.'s plant near Hermatite and Dow Chemical Co.'s plant near Pevely, **$2,500,000**. CD 7/24/56.

▲ **Nebraska**—SUB-STATIONS—Nebraska Public Power System, Columbus, sub-station, Beemer City, **$300,-000**; sub-station, Creighton, **$400,000**; sub-station, Kearney, **$150,000**; sub-station, Lexington, **$600,-000**; sub-station, Humboldt, **$250,000**. P. E. Hampton, c/o owner, ch. engr.

▲ **Okla., Tulsa**—FAIRGROUNDS IMPRVS.—Tulsa Co., Court House, defeated bonds July 24, Fairground imprvs. **$1,300,000**. CD 5/21.

Pa., Pittsburgh—PARKING LOTS—Dormont Council, three off-street parking lots, Dormont Boro. **$350,000**. Ramp Building Corp., 230 Park Ave., New York, N. Y., consult. engrs.

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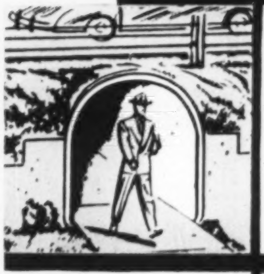

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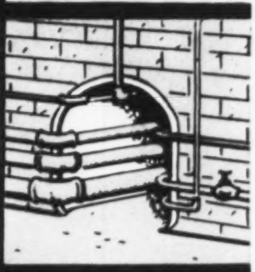
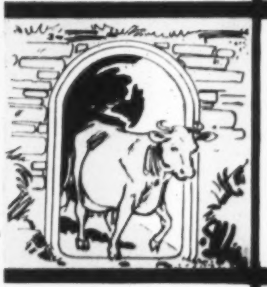
Carries steam pipes, gas mains, electrical cables and telephone lines with ample room for workmen to make repairs. Flat-Base Pipe is also used for culverts and cattle passes.





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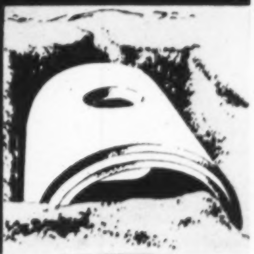
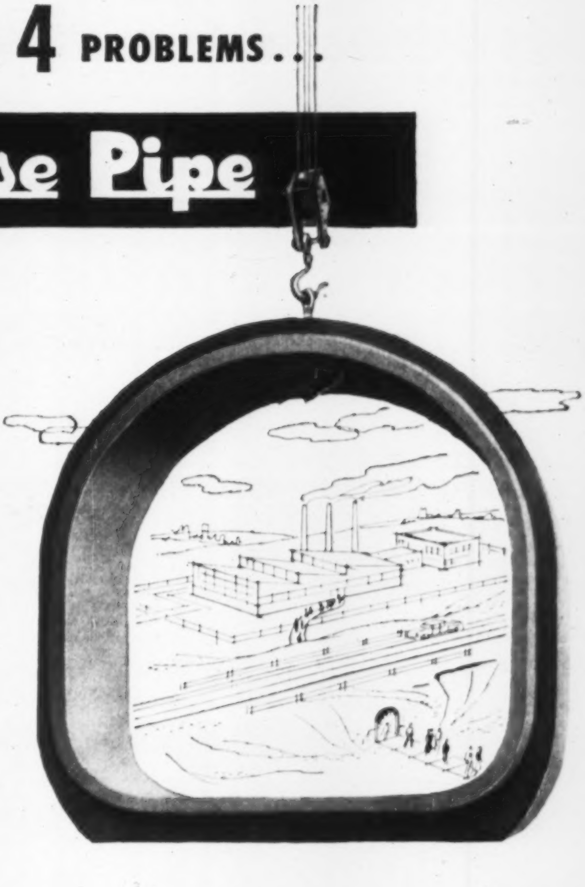
Manholes for utility companies have often been built with Flat-Base Pipe in less than four hours. This eliminates needless traffic delay and reduces labor costs to a minimum.





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American-Marietta Company of Pennsylvania

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

Massachusetts—BA 8/21—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, sewer replacement, Smith St., Adams, $137,250. Plans deposit $10 refundable. CD 5/17, under LB.

MASSACHUSETTS—BA 8/21—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Worcester—hy. reconstr. Highland St., $180,000. Plans deposit $5 refundable.

Mass., **North Andover**—BA 8/21—Town, Bd. P. Wks., 120 Main St., sanitary sewers, pipe culvert, $150,000. Plans deposit $15. Camp, Dresser & McKee, 6 Beacon St., Boston, engrs.

Conn., **Hartford**—BOILER SETTING—BA 8/22—State Pub. Wks. Dpt., 165 Capitol Ave., rebuilding boiler setting, State Capitol, P. J. Carroll, state engr.

Massachusetts—BA 8/23—Commonwealth of Mass., Dpt. Natural Resources, Div. Forests & Parks, 15 Ashburton Place, Boston, flood damage repairs Thompsons Dam, Spencer State Forest, Spencer, $160,000. Plans deposit $20 refundable.

Mass., **North Adams**—BOILER PLANT—BA 8/24—State, Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, B-807, improving boiler plant, State Teachers College, $73,000. Plans deposit $10 refundable. McClintock & Craig, 458 Bridge St., Springfield, archts.

BUILDINGS—BA

† Conn., **Groton**—POST OFFICE—BA 8/21—U. S. Naval Submarine Base, New London, security partitions for post office, Bldg. No. 164.

† Conn., **Groton**—QUARTER REPAIRS—BA 8/22—U. S. Naval Submarine Base, New London, QUARTERS, N-6, N-7, N-11, and N-15, repairs.

Conn., **Hamden**—SCHOOL ADDN.—BA 8/22—State Pub. Wks. Dpt., 165 Capitol Ave., Hartford, power generators and controls, Eli Whitney Regional Technical School. P. J. Carroll, State Pub. Wks. Dpt., engr. CD 11/30/55.

Mass., **Fitchburg**—SCHOOL—BA 8/22—Order of Presentation, Holy Family Institute, c/o R. C. Diocese, Worcester, Most Rev. John Wright, D.D., bishop, 1 Tuckerman St., Worcester, school, $500,000. Plans deposit $30 refundable. Morris W. Maloney, 220 Dwight St., Springfield, archt. CD 8/2.

† Conn., **Groton**—MANAGERS QUARTERS—BA 8/23—Officer in Charge of Constr., U. S. Naval Submarine Base, New London, manager's quarters repairs, Bldg. No. 223, U. S. Naval Submarine Base.

N. H., **Penacook**—FACTORY—BA 8/23—Beede Electrical Instrument Co., Inc., West St., 135x135 ft., brick, concrete factory, Daniel Webster Hy., $170,000. Plans deposit $35. Lyford & Magenau, 10 Fayette St., Concord, archts. CD 10/26/55.

Me., **Bangor**—Y.M.C.A. BLDG.—BA 8/28—Bangor Young Men's Christian Assn., 127 Hammond St., Y.M.C.A. bldg. addn., remodeling, gymnasium and swimming pool, $345,000. Plans deposit $40 refundable. Eaton W. Tarbell & Assoc., 84 Harlow St., Bangor, archts. CD 12/16/53.

Conn., **Plymouth**—SCHOOL ADDN.—BA 8/30—Town, Plymouth Center School and East Main St. School addns. $425,000. Plans deposit $100. Malmfeldt Assocs., 36 Pearl St., Hartford, archts. Paul D. Bemis, 36 Pearl St., Hartford, consult. engr. CD 3/27.

▲ Conn., **New Britain**—SCHOOL—BA 9/7—Town, Supt. Schools, Walnut Hill School, Southwest Junior High School, Steele St., $1,200,000. Plans deposit $150. Extended date. John W. Priestly, Jr., Sun Bldg., Lowell, Mass., archt. CD 7/31.

Mass., **Waltham**—SCHOOL—BA 9/7—City, Purch. Agt., City Hall, vocational high school, Church and Summer Sts., $700,000. Plans deposit $100 refundable. Fenton G. Keyes Assoc., 267 Moody St., engr.-archts. CD 5/9, under LB.

▲ Conn., **New Britain**—SCHOOL—BA 9/21—Town, Supt. Schools, Walnut Hill School, North Junior High School, Farmington Ave., $1,261,000. Plans deposit $150. Extended date. John W. Priestly, Jr., Sun Bldg., Lowell, Mass., archt. CD 7/31.

† Mass., **Northampton**—LAUNDRY ADDN.—BA 10/2—Veterans Admin., Munitions Bldg., Wash., D. C., laundry bldg. No. 14, addns., alterations Veterans Admin. Hospital.

BUILDINGS—SLC

Mass., **Roslindale**—SCHOOL—BA—St. Clares High School for Girls, Chancery Ofc., 1 Lake St., Brighton, soon lets contract 3 story school, approx. $400,000. John P. Heffernan, 131 State St., Boston, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW HAMPSHIRE**—Dpt. P. Wks. & Hys., Concord,
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I. CA **$1,961,364**. est. $1,950,000. road mix hy. and bridge work on Spaulding Turnpike, Rochester. CD 7/19, under LB.

† **U. S. Eng.**, 150 Couseway St., Boston, Mass.; cancelled bids to have been opened Aug. 7, imprv. dredging, President Anchorage Roads, Basin, Boston Harbor, CIVENG 19-016-57-5, MASSACHUSETTS. CD 7/23.

Tornabene Bros. Co., 170 Needham St., Newton Upper Falls, Mass. LB **$548,000**, est. $550,000. ventilation stacks fan chamber substation, control center, John F. Fitzgerald Expressway Tunnel, Boston, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Charles A. Maguire & Assoc., 14 Court Square Bldg., Boston, and Fay, Spofford & Thorndike, 11 Beacon St., Boston, Mass., engrs. Bids July 31. CD 7/13.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Berke Moore Co., Inc., 8 Newbury St., Boston, Mass. LB **$6,509,888**. Proj. 1-352 (1), Contr. M, express hy. central Artery, Kneeland to Dover Sts., Bids Aug. 6. CD 8/2.

Manning Constr. Co., 26 Manning Rd., Dorchester, Mass. LB **$74,943**, est. $80,000. bit. con. Barna Rd., Dorchester, BOSTON, MASS. City, P. Wks. Dpt., City Hall Annex, Boston, Mass. Bids Aug. 2.

Medford Amusement Co., W. N. Knox, Revere Beach Parkway, Medford, Mass. Owner Builds. Approx. **$175,000**. Twin Drive in theater on 23 acre lot, MEDFORD, MASS. CD 4/13/55.

A. Baruffaldi Co., 23 Elm St., Somerville, Mass. LB **$443,743**. est. $451,000. trunk sewers, Contr. No. 1, Webster St. to R.R., RANDOLPH, MASS. Town, Bd. Selectmen, South Main St., Randolph, Mass. Bids Aug. 2. CD 7/18.

Cannavino & Shea Constr. Co., Inc., 22 Leland Ave., Leominster, Mass. LB **$92,766**. est. $95,000. Contr. S-56-6, sanitary sewers etc., Mill St. and Sweetbrier Lane, WORCESTER, MASS. City, Earl R. Perry, Comr., Pub. Wks. Office City Hall, Worcester, Mass.

Seminole Constr. Co. Inc., 12 Devens St., East Hartford, Conn., LB **$147,420**, est. $152,000. Contr. 316, repairing spillway channel at Saville Dam East Branch Farmington River, Barkhamsted, HARTFORD, CONN. Metropolitan Dist., 115 Broad St., Hartford, Conn. Bids Aug. 2. CD 7/30.

F. B. O'Neil Co., 70 Airport Rd., Hartford, Conn. CA, **$44,478**. 450 ft. 24-in. c.i. watermains, Pameacha Pond Area, MIDDLETOWN, CONN. City, City Hall, Middletown, Conn. Awarded Aug. 2. CD 1/29/47.

State P. Wks. Dpt., 165 Capitol Ave., Hartford, Conn., received no bids Aug. 1, placement of sand fill, Sasco and Southport Beaches, Proj. BI-FC-5C, SOUTHPORT, CONN. CD 7/23.

Clark & Fray Constr. Co., 631 Lindley St., Bridgeport, Conn., LB **$366,091**. Section 1 and 2, sanitary sewers. WEST HARTFORD, CONN. Town, Town Hall, West Hartford, Conn. Bids Aug. 2.

BUILDINGS—LB & CA

Cote Constr. Co., 20 St. John Ave., Van Buren, Me. LB **$656,928**. est. $650,000. high SCHOOL adjacent to auditorium, BREWER, ME. City, Trustees Brewer School Dist., 5 Somerset St., Brewer, Me. Bids July 31. CD 7/23.

MacMillan Co., Keene, N. H., CA Approx. **$350,000**. PLANT and OFFICE, PETERBOROUGH, N. H. New Hampshire Ball Bearing, Inc., Peterborough, N. H. Bids June 12. CD 6/6.

Thomas Mulcare Corp., 66 Western Ave., Allston, Mass. CA approx. **$125,000**. SERVICE bldg., Bussey St., DEDHAM, MASS. Worcester Gas, Light Co., 727 Mass. Ave., Cambridge, Mass. Bids July 23. CD 7/11.

Owner, c/o John C. Scott, 306 Union St., Rockland, Me. Owner Builds. Approx. **$350,000**. RESIDENTIAL DEVELOPMENT, incl. 25 houses, Woodridge, Winter St., HANOVER, MASS.

▲ **Rindone & Petitti**, c/o owner. CA Approx. **$1,100,000**. RESIDENTIAL DEVELOPMENT incl. 90 houses, Rte. 37 off Rte. 128, HOLBROOK, MASS. Twin Shores Realty Co., Eddie Pellagrini, asst. treas., Rte. 37, Holbrook, Mass.

Owner, c/o Lawrence DiLorenzo, agent., 22 Priest Rd., Watertown, Mass. Owner Builds. Est. **$348,000**. RESIDENTIAL DEVELOPMENT "Kenwood Acres" incl. 22 houses, off King St., LITTLETON, MASS.

Martin Cerel, 18 Central St., Natick, Mass. Owner Builds **$350,000**. RESIDENTIAL DEVELOPMENT, incl. 20 houses, NEEDHAM, MASS.

Sciaba & Co., Inc., 86 Shawmut Ave., Boston, Mass. LB **$414,400**, est. $360,000. Myles Standish Elementary SCHOOL, East Squantum St., QUINCY, MASS. City, 70 Coddington St., Quincy, Mass. Bids Aug. 3. CD 7/25.

C. A. Batson Co., 26 Arlington St., Boston, Mass. CA **$380,000**, est. $375,000. elementary SCHOOL, Pleasant St., RAYNHAM, MASS. Town, Elementary School Bldg. Comn., South School, Raynham, Mass. CD 7/19, under LB.

Park Constr. Co., Inc., 40 Court St., Boston, Mass. CA **$537,624**. est. $600,000. elementary and junior high SCHOOL, Pine Hill off Eliot St., SHERBORN, MASS. Town, Town Office Bldg., Sherborn, Mass. CD 8/2, under LB.

Owner, c/o Walter J. Riley, 216 Appleton St., Lowell, Mass. Owner Builds. **$346,000**. RESIDENTIAL DEVELOPMENT, Pleasant Valley, incl. 29 houses, Rte. 3A, TUNGSBORO, MASS.

▲ **Aberthaw Constr. Co.**, 60 State St., Boston, Mass. CA Approx. **$1,500,000**. MANUFACTURING bldg. and office, Rte. 128, WALTHAM, MASS. Sanborn Co., 39 Osborn St., Cambridge, Mass. Cabot, Cabot & Forbes, 60 State St., Boston, Mass., engrs.

J. W. Bishop Co., 109 Foster St., Worcester, Mass. LB **$377,650**, est. $413,000. multi-level PARKING facility union, Foster and Mercantile Sts., WORCESTER, MASS. City, City Hall, Worcester, Mass. Bids Aug. 2. CD 7/23.

Fred E. Gordon, 20 Burlington St., Hartford, Conn., CA, **$120,000**. 100x200 ft., concrete, brick WAREHOUSE and office, Florence and Hartland Sts., EAST HARTFORD, CONN. Max Sanderman Inc., 207 State St., Hartford, Conn.

Geo. L. Hickey Inc., 13 Spring St., Stamford, Conn., CA **$451,890** general contract and site work only Osborne Hill Elementary SCHOOL, Stillson Rd., FAIRFIELD, CONN. Town, School Bldg. Comn., Town Hall, Fairfield, Conn. Bids July 18, awarded Aug. 2. CD 7/26, under LB.

Vuono Constr. Co., 217 Bedford St., Stamford, Conn., CA **$400,000**, 4 story private PATIENT WING, STAMFORD, CONN. Stamford Hospital, 190 W. Broad St., Stamford, Conn. Awarded Aug. 3. Werner-Jensen Associates, 641 Summer St., Stamford, engrs. CD 7/26.

C. A. Dosge Co., 2 Erie St., Cambridge, Mass., CA, **$100,000**. TERMINAL, Maple St., THOMPSONVILLE, CONN. A. C. E. Trucking Co., Thompsonville, Conn. Bids July 16. CD 7/17.

Wilbur Cross Motel Inc., c/o James F. Lineham, Jr., North Ridgeland Rd., Wallingford, Conn., Owner Builds. **$400,000**. Howard Johnson RESTAURANT and 60-unit motel, Wilbur Cross Parkway and Rte. 5, WALLINGFORD, CONN. CD 8/2.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

† Pa., **Reading**—DRYING TOWER—BA 8/20—U. S. Property & Fiscal Officer for Pa., RD No. 2, Annville, parachute drying tower, Spaatz Field. Plans deposit $5.

† Md., **Patuxent River**—PAVING—BA 8/21—Pub. Wks. Office, U. S. Naval Air Station, Patuxent River, resurf. of paving; U. S. Naval Air Station, NBY-2709, Spec. 2709-56. Plans deposit $10.

Pa., **Phila**—BA 8/21—City, Dpt. Procurement, City Hall Annex, Bids 266-I Contr. 772-W, water mains in Glenn St. and other locations; Bids 2662, Contr. 766-W, water mains in Frankford Ave. from Grant Ave. to Morrell Ave. CD 3/11/46; Bids 2641-R, Contr. 732-W, water mains, in Maple and Bustleton Aves. Bids 7/24 rejected. CD 7/17.

Pa., **Wilkes-Barre**—BA 8/22—General State Auth., 18 and Herr Sts., Harrisburg, sanitary, storm sewer sys., Institution of Defective Delinquents, $280,000. Plans deposit $10. Alfred Hopkins Assoc., 292 Madison Ave., New York 17, N. Y., archts. A. F. Jones, ch. engr. Bids 6/13 rejected. CD 5/22, under Public Buildings.

Pa., **Phila.**—BA 8/23—City, Dpt. Procurement, City Hall Annex, asphalt repaving, resurf. CD 10/28/43.

New York—FIRE PROTECTION—BA 8/24—Long Island State Park Comn., Admin. Headquarters Belmont Lake, State Park, installing fire protection sys. incl. sprinkler sys. at Belmont Shops, Belmont Lake State Park.

† **D. C., Wash.**—STEAM DISTRIBUTION TUNNEL—BA 9/5—General Services Admin., Public Bldg. Services General Services Bldg., Wash., D. C., 1,250 ft. 8x8 ft. conc. steam distr. tunnel, 230 ft. conc. steam conduit, manholes, inlets, exhaust fans, etc., for Maximum Security bldg., St. Elizabeth Hospital. Plans deposit $15. CD 3/29/55, under Public Buildings.

N. J., **Newark**—BA 9/10—Passaic Valley Sewerage Comn., 24 Brandford Pl., Newark, Newark Bay Pumping Sation, sedimentation basin improvs. and sludge handling facilities; Contract 355, general contract; Contr. 356, electrical contract; Contract 357, heating and ventilating contract; Contract 358, plumbing contract; Contract 359, structural steel contract. Plans deposit $25 each. S. A. Lubetkin, ch. engr.

▲† **New York**—BA On or About 9/12—U. S. Eng., Engineer Park, Niagara and Bridge Sts., Buffalo, Zone 7, dredging of South Cornwall Island Channel, approx. 5,000,000 cu. yd. excavation, part of St. Lawrence River lying south of Cornwall Island and east of Pollys Gut to a point just east of Raquette Point, 8 mi. northeast of Massena, 1¼ mi. north of Rooseveltown, both in St. Lawrence Co., St. Lawrence Seaway, St. Lawrence River, for St. Lawrence Seaway Development Corp., CIVENG-30-024-57-16. CD 9/9/54.

D. C. Wash.—BA 9/19—D. C. Govt., Dpt. of Sanitary Eng., 499 Pa. Ave. N. W., Section 4, E. Branch Piney Branch Trunk Sewer in Kansas Ave. and 5 St. from Varnum St. to Ingraham St. N. W. Plans deposit $50.

BUILDINGS—BA

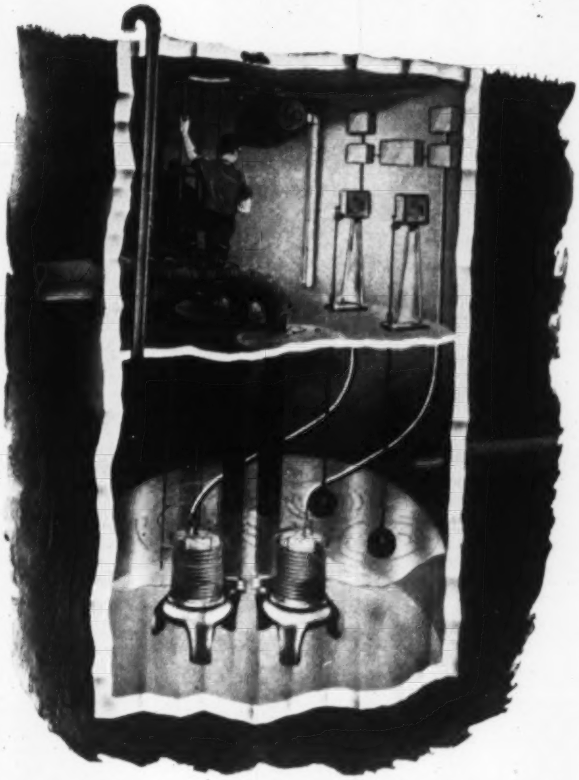
Md., **Fort Ritchie**—HOUSING—BA 8/21—U. S. Eng., First and Douglas Sts. N. W., Wash., D. C., construct and finance 70 housing units, (Capehart), ENG-49-080-57-1 (1). Plans deposit $50. CD 7/24.

N. Y., **Forest Hills**—LIBRARY—BA 8/22—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general constr., plumbing work, heating and ventilating work, electrical work and lighting fixtures for Forest Hills Branch Library, at north side of 71 Ave., 140 ft. east of 108 St. Plans deposit $50. CD 8/17/45.

▲ N. J., **Mount Holly**—OFFICE, etc.—BA 8/29—Burlington Co. Bd. Freeholders, Mount Holly, 4 story, 90,000 sq. ft., stone, brick, block office and jail. $1,500,000. Micklewright & Mountford, and Petty & Croft, E. Stuyvesant & Prospect Sts., Trenton, archts. Extended date. CD 7/17.

(Continued on page 118)

The SUBMERSIBLE SEWAGE EJECTOR



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Special Bulletin SE-862

New Bulletin SE-862 specially prepared for Lift Station Design is now available upon request. This bulletin gives possible layouts, minimum dimension requirements, specifications on fittings and suggested piping diagram. **Write for it today!**

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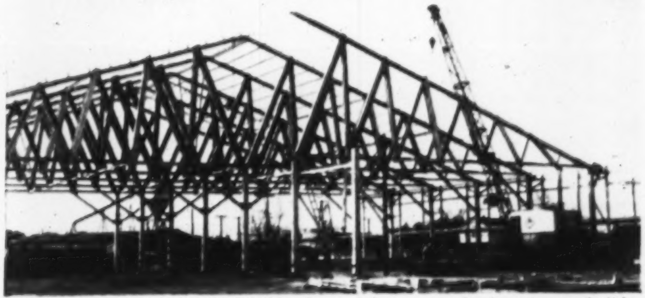
Wood Roof Trusses save 30% of Building Cost!



One of Angelina County Lumber Company's two new lumber storage buildings constructed at Keltys, Texas. Clear-span 75-ft. sawtooth wood trusses fabricated at site by Connector Truss Co., Houston; Lufkin Construction Co., general contractor; TECO connectors and Trip-L-Grip framing anchors from Ideal Building Materials, Inc., Shreveport, La.

Two new warehouses — 69,000 s.f. of lumber storage space — have been built with wood roof trusses and TECO wedge-fit connectors, at a cost of $136,000. The lowest bid on framing in another material was $195,600 — a whopping saving of 30% in construction cost!

Further savings — automatic sprinklers reduced insurance rates to 15¢ on buildings, 10¢ on contents, against 54¢ and 79¢, respectively, on unsprinklered buildings using other material.

Timber is plentiful and readily available — use it with TECO connectors for structural efficiency and economy.

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WOOD ROOF TRUSSES SCORE AGAIN!

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City.......... Zone.......... State..........

In 11 days, bedrock depth for Berkshire Thruway was measured at 220 points

The Berkshire Thruway is a key 30-mile arterial link connecting the New York State Thruway near Selkirk, N. Y., with the Massachusetts Turnpike near Stateline, Mass. The design engineers for one of its sections needed to know bedrock elevations and general overburden conditions at sites of important cuts and highway structures. To expedite obtaining this information the seismic method was adopted for prelminary investigations. A Gahagan 4-man Seismic Survey Crew did the work, using portable equipment. Their subsurface exploration, with bedrock found at depths exceeding 90 feet in some cases, covered 220 points. It was completed in 11 days between Nov. 14 and 30, 1955, and provided the required data. For a factual report on how seismic surveys save time and money, provide a wealth of extra information, write on your letterhead for Bulletin 1 to Geophysical Survey Division, Gahagan Dredging Corporation, 90 Broad St., New York 4, N. Y.

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(Continued from page 116)

▲ **D. C., Wash.**—HOSPITAL ADDN.—BA. 9/18—Columbia Hospital for Women, 25 and L Sts. N.W., 5 story hospital addn. $1,000,000. Plans deposit $75. Irwin S. Porter & Sons, Metropolitan Bank Bldg., Wash., D. C., archts. CD 11/11/54.

HEAVY CONSTRUCTION—LB & CA

Vitale Bros., Piffard, N. Y. LB **$83,330** (3 bidders) imprvs. grounds, library, music, classroom and auditorium bldg., and central heating plant, State University Teachers' College, GENESEO, N. Y. Henry A. Cohen, dir., Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Aug. 2. CD 7/20.

Radory Constr. Corp., 94 Cherry Valley Rd., West Hempstead, N. Y. LB **$189,529.** (5 bidders) repair 1½ mi of Long Beach Rd. between Franklin and Lincoln Aves., Oceanside, MINEOLA, N. Y. Comr. P. Wks., Nassau Co., Old County Court House, Mineola, N. Y. Bids Aug. 3. CD 7/26.

Allen Bros., Inc., 850 Niagara Falls Blvd., Buffalo, N. Y. LB **$229,585.** est. $250,000. (3 bidders) enlarging and improving city incinerator, TONAWANDA, N. Y. Town, City Hall, Tonawanda, N. Y. Nussbaumer, Clarke & Velzy, 327 Franklin St., Buffalo 2, N. Y., engrs. Bids July 30. CD 7/25.

M & L McHugh, 892 N. Markol St., Phila., Pa. LB **$159,538**, water mains bids 2639 and 2640, PHILA., PA. City, Dpt. Procurement, City Hall Annex, Phila., Pa. Bids July 24. CD 7/17.

Highway Constr. Co., P. O. Box 4437, Wash. 17, D. C., LB **$108,959.** resurf. (heater method) various roadways, WASH., D. C. D. C. Govt. Dpt. of Hys., 499 Pa. Ave. N.W., Wash., D. C. Bids July 26.

Alfred H. Smith, Branchville, Md., LB **$139,271.** c. conc. curb, gutter and laying b. conc. surf. at various locations. WASH., D. C. D. C. Govt. Dpt. of Hys., 499 Pa. Ave. N.W., Wash., D. C. Bids July 24. CD 7/26.

BUILDINGS—LB & CA

▲ **Powell Estates**, 170-07 Jamaica Ave., Jamaica, N. Y. Owner Builds. **$1,121,000.** 59 HOUSES on tract at Ave. M. and East 68 St., BROOKLYN, N. Y. Kavy & Kavovitt, 44 Court St., Brooklyn 2, N. Y., archts.

Hubbard Properties, Inc., 16 Court St., Brooklyn 2, N. Y. Owner Builds. **$600,000.** 6 story APARTMENT, 9303 Shore Rd., BROOKLYN, N. Y. CD 3/21.

Co-Builders, Inc., 550 Flatbush Ave., Brooklyn 25, N. Y. Owner Builds. Est. **$780,000.** 6 story APARTMENT at 9511 Shore Rd., BROOKLYN, N. Y. Schulman & Soloway, 100-15 Queens Blvd., Forest Hills, N. Y., archts. CD 5/8.

Abraham Gibel, 939 E. 53 St., Brooklyn, N. Y. Owner Builds. Est. **$360,000.** 20 HOUSES on East 55 St., BROOKLYN, N. Y. Mac L. Reiser, 186 Joralemon St., Brooklyn 2, N. Y., archt.

John DeAngelis, 35 Forbes Blvd., Tuckahoe, N. Y. CA. **$367,381.** reconstr. Oakridge Clubhouse on Mill Rd. as new Eastchester TOWN HALL, EASTCHESTER, N. Y. Town Council, Eastchester, N. Y. Bids July 25.

▲ **Rural Estates**, c/o Long Island Homes, 168-12 Hillside Ave., Jamaica 32, N. Y. Owner Builds. **$1,875,000.** 125 HOUSES on tract at Jericho Turnpike, east of Larkfield Rd., EAST HUNTINGTON, N. Y.

▲ **Gerace & Castagna, Inc.**, 155-10 Jamaica Ave., Jamaica, N. Y. CA Est. **$9,500,000.** co-operative APARTMENT proj. incl. 1,200 units in 16 six story bldgs. on 15-acre tract at Union St. and 31 Rd., FLUSHING, N. Y. Linden Towers Apartments, c/o contractor.

Belmont Lake Estates, c/o Bonded Realty Corp., Sunrise Hy., Massapequa, N. Y. Owner Builds. Est. **$350,000.** 50 HOUSES on tract at Parkway Blvd. and Belmont Ave., NORTH BABYLON, N. Y.

▲ **Randy Constr. Co.**, 710 Federal St., Camden, N. J., Separate Contracts. **$1,000,000.** 80-unit RESIDENTIAL DEVELOPMENT, Evesham Rd., etc., BLACKWOOD, N. J. Frank W. Hall, 503 4 Ave., Haddon Heights, N. J., archt.

▲ **Foxwood Homes, Inc.** H. J. Fox Rt. 35, Hazlet, N. J. Owner Builds. **$3,500,000.** 240 HOMES, Foxwood Homes adjoining the shopping center, HAZLET, N. J. Herbert Tannenbaum, 205 E. 43 St., New York, N. Y., archt.

▲ **Albert Shender**, 710 Federal St., Camden, N. J., Separate Contracts. **$1,000,000.** RESIDENTIAL DEVELOPMENT, Wyndam Rd., etc. PENNSAUKEN, N. J. Frank W. Hall, 503 4 Ave., Haddon Heights, archt.

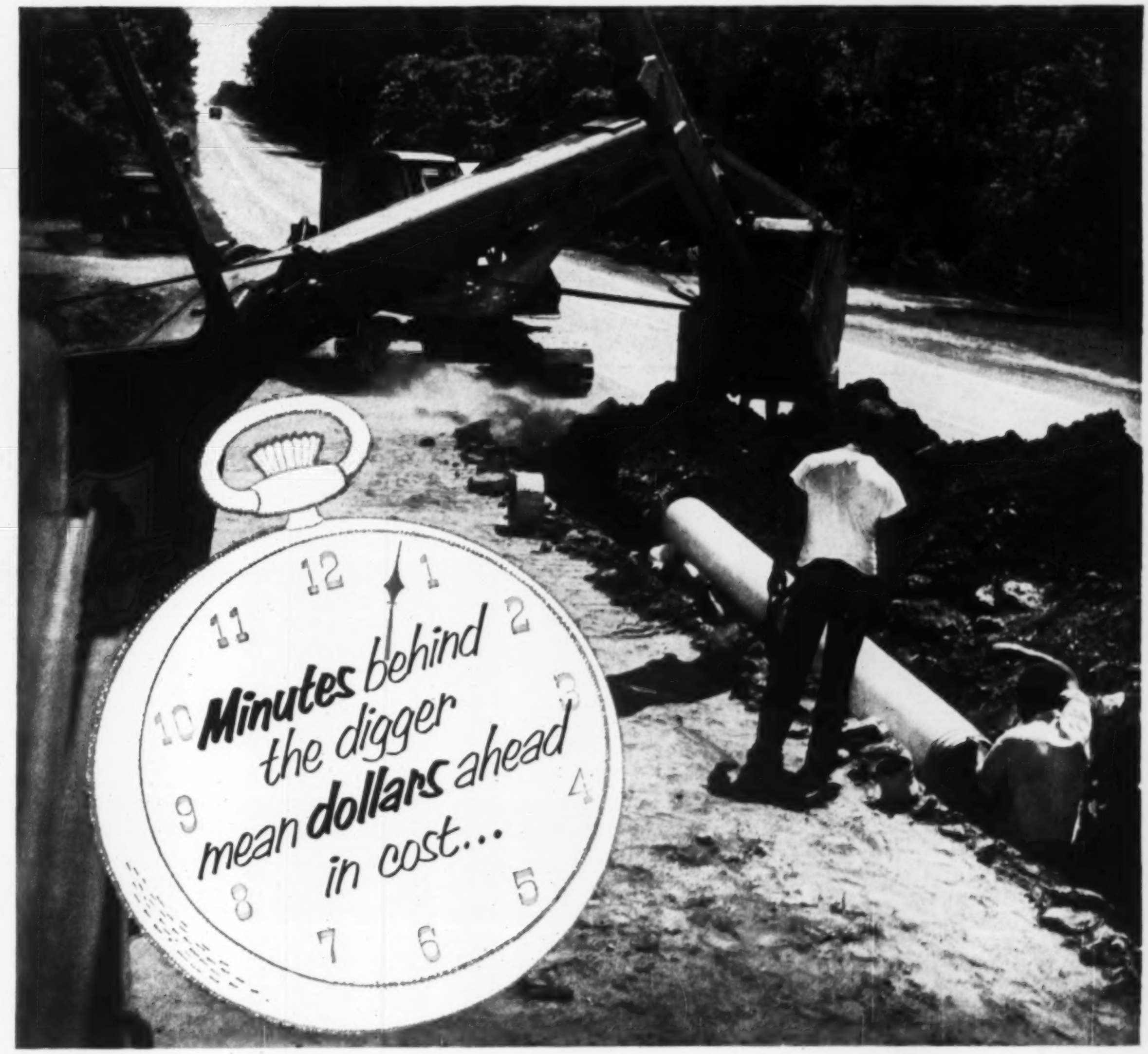
M & L Constr. Co., 108 S. 40 St., Phila., Pa. CA **$400,000.** 2 story, 180x115x59 ft., stone, con. block CHURCH and school, 3 story, 74x35 ft. convent, BROOMALL, PA. St. Pius X R. C. Church, Lawrence Rd., Marple, Pa. Bids May 22. CD 5/11.

▲ **H. B. Alexander & Son**, 315 Vaughn St., Harrisburg, Pa. CA **$1,000,000.** SHOPPING CENTER, HARRISBURG, PA. Harrisburg Shopping Center, Inc., Seventh and Division Sts., Harrisburg, Pa. Bids May 11. CD 5/11.

▲ **Charles Sheldrake**, Mason Ave. and Township Line, Drexel Hill, Pa., Separate Contracts, Est. **$1,200,000.** RESIDENTIAL DEVELOPMENT incl. 40 units, Haverford Rd., HAVERTOWN, PA.

▲ **Reese Constr. Co.**, Jeffersonville, Pa. Separate Contracts. **$2,000,000.** RESIDENTIAL DEVELOPMENT, Marshall Manor, JEFERSONVILLE, PA. Nolen & Swinburne, 1601 Locust St., Phila., Pa., archts.

(Continued on page 120)



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(Continued from page 118)

▲ **United Engineering & Foundry Co.**, 948 Fort Duquesne Blvd., Pittsburgh, Pa. CA Total Est. cost **$6,000,000**. mill machinery contract, 6-stand continuous 30 in. MILL at Monessen Works, MONESSEN, PA. Pittsburgh Steel Co., Grant Bldg., Pittsburgh, Pa. Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, Mich., engrs. Awarded Aug. 1.
General Electric Co., River Rd., Schenectady, N. Y. CA main electrical drives. (Monessen, Pa.)

Westinghouse Electric Corp., 3 Gateway Center, Pittsburg, Pa. CA auxiliary electrical equip. (Monessen, Pa.)

Arthur A. Kober Co., 1630 W. Thompson St., Phila., Pa. CA **$750,000**. 2 story, masonry HOTEL and restaurant, SPRINGFIELD, PA. Samrus Corp., c/o Jacques Fox, 7020 Garret Rd., Upper Darby, Pa. CD 7/30.

Sidney Elkman, 17 and Thompson Sts., Phila., Pa. CA **$350,000**. 1 story, 2 story, 130x200 ft., brick, block, SUPERMARKET and parking lot, SPRINGFIELD, PA. Penn Fruit Co., 1919 Chestnut St., Phila., Pa. George W. Neff, 1520 Locust St., Phila., Pa., archt.

▲ **Tracy-Roosevelt Corp.**, 2101 16 St. N.W., Wash., D. C., Owner Builds, **$1,000,000**. remodeling Roosevelt HOTEL, 2101 16 St. N.W., WASH., D. C.

▲ **Roscoe Construction Co.**, 1107 19 St., N.W., Wash., D. C. CA, **$5,000,000**. 11 story OFFICE near 17 and H Sts. N.W., WASH., D. C. Ned Bord & Associates, 1321 Connecticut Ave. N.W., Wash., D. C. Edwin Weihe, 810 18 St. N.W., archt.

SOUTH

HEAVY CONSTRUCTION—BA

‡ **Fla., Cape Canareral A.F.B.**—GUIDANCE LABORATORY—BA 8/24 Contr. Ofcr., Patrick Air Force Base, Critical Power, North American Guidance Laboratory, IFB-08-606-57-33.

▲ **Fla., Miami**—NOSE HANGARS—BA 8/28—Bd. Dade Co. Comrs., Court House, Miami, National Airlines Nose Hangars, Miami International Airport. Plans deposit $75. Weed-Russell-Johnson Assocs., 550 Brickell Ave., Miami, archts. Norman J. Dignum & Assocs., 260 Palmero Ave., Coral Gables, struct. engrs. R. L. Duffer & Assocs., 3356 Virginia St., Miami, mech. engrs. Altec Eng. Co., 1179 N. E. 79 St., Miami, elec. engr. CD 7/19, under LB.

† **Tenn., Tullahoma**—TEST SECTION CARTS—BA 10/2—U. S. Eng., Arnold Engineering Development Center, Tullahoma, test section carts for supersonic circuit of Propulsion Wind Tunnel, Arnold Engineering Development Center, Coffee Co., Inv. No. ENG-0126-57-3. CD 11/14/49.

BUILDINGS—BA

La., Des Allemands—CHURCH—BA 8/22—at office of Nolan, Norman & Nolan, archts., Queen & Crescent Bldg., New Orleans, 1 story steel, brick veneer church bldg. for St. Gertrude's Catholic Church, Des Allemands, La.

La., Shreveport—OFFICE—BA 8/28—State Bldg. Authority, Capitol Bldg., Baton Rouge, state office; $500,000. Plans deposit $50. Walker & Walker, 1618 Slattery Bldg., archts. CD 8/6/54.

Ga., LaGrange—SCHOOLS—BA 9/4—State School Bldg. Auth., 244 Washington St. S.W., Atlanta, Kelley Elementary School and West Side Junior High School. Plans deposit $50. Hall & Ferguson, 811 Bankers Insurance Bldg., Macon, archts.

▲† **Ga., Atlanta**—COMMUNICABLE DISEASE CENTER—BA 9/27—General Services Admin., Pub. Bldgs. Service, Regional Office, 50 Seventh St., N. E., communicable disease center, $12,300,000. Robert & Co. Assoc., 96 Poplar St. N. W., archts. CD 10/10/55.

HEAVY CONSTRUCTION—LB & CA

▲ **R. G. LeTourneau, Inc.**, Longview, Tex. CA **$3,250,000**. off shore steel drilling platform, near Vicksburg, MISSISSIPPI. Zapata Off-Shore Co., City National Bank Bldg., Houston, Tex.

† **Jahncke Service, Inc.**, 814 Howard Ave., New Orleans, La. LB **$296,387**. (2 bidders) Port Allen to Morgan City, Mile 28.3 to Mile 31.0 consisting of 1,083,000 cu. yd., Morgan City, Inv. 57-4, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids Aug. 1. CD 7/18.

BUILDINGS—LB & CA

Bd. Comrs. of State Institutions, State Capitol, Tallahassee, Fla., rejected bids July 26, Proj. 444 HOSPITAL For colored patients, CHATTAHOOCHEE, FLA. LB **$674,200**. CD 8/6, under LB.

James J. Simpson, 730 N.E. 19 Ave., Ft. Lauderdale, Fla., CA **$500,000**. 40-unit Co-op APARTMENTS, 180 Nurmi Isle of Venice, FORT LAUDERDALE, FLA. Oasis Development Co., Professional Bldg., Ft. Lauderdale, Fla. Charles McKirahan, 2400 E. Oakland Park Blvd., archt.

Chaves Constr. Co. of Miami, 310-95 St., Surfside, Fla., Owner Builds, **$600,000**, 3 story 100x260 ft., 94-room MOTEL with swimming pool, 19505 Collins Ave. MIAMI BEACH, FLA. MacKay & Gibbs, 927 41 St., Miami Beach, archts. Oboler & Clarke, 927 41 St., Miami Beach, struct. engrs.

Bartley, Inc., 438 Gravier St., New Orleans, La. CA, **$571,279**. 1 story, rein.-con., brick, 40,000 sq. ft. Henderson H. Dunn Elementary SCHOOL NEW ORLEANS, LA. Orleans Parish School Rd., 703 Carondelet St., New Orleans, La. CD 8/7, undere LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Wis., Ashland—RUNWAY—BA 8/21—City grading and paving of runways. Plans deposit $15. Genisot Engr. Co., 1512 N. Eagle St., Rhinelander, consult. engr. CD 9/28/55.

O., Delaware—BA 8/22—State Director of Mental Hygiene & Correction, 220 S. Parson St., Columbus, water plant addns., Girls' Industrial School.

Ill., Wooddale—BA 8/23—Village, sewage treatment plant and sanitary sewer system, $300,000. W. L. Ashdown Engr. Co. 1023 Burlington, Downers Grove, consult. engr. CD 6/13.

O., Warren—BA 8/29—Trumbull Co. Comrs, Court House, sanitary sewerage sys., Sect. 1, sewage treatment plant; Sect. II, 29,935 ft. 6- to 24-in. sewer pipe, 13,120 ft. 4- to 12-in. force main, 90 manholes, 5 underground pumping stations, misc. items, Brookfield Twp. $760,000. Plans deposit $50. Snyder, McLellan & Weinberg, P.O. Box 187, Hillsboro, Ind., engrs. CD 6/6.

† **O., Toledo**—RUNWAY EXTENSIONS—BA 9/5—U. S. Eng., 237 Fourth Ave., P.O. Box 2127, Huntington 18, W. Va., runway extensions, taxiways, aprons, Air National Guard, Toledo Express Airport, ENG-46-022-57-5. CD 7/30.

† **Ill., Rantoul**—WATER SOFTENING SYSTEM, etc.—BA On or About 9/6—U. S. Eng., 475 Merchandise Mart, Chicago, Zone 54, water softening "B" System and connecting road in test cell area, Chanute Air Force Base, Serial No. ENG-11-032-57-6. CD 3/26/51.

O., Cincinnati—BA 9/11—Bd. Comrs., Hamilton Co., Court House, trunk sewer line from Bridgetown Rd. to Lawrence Rd., $581,500, Geo. Lemmel, county engr. CD 7/6.

† **Ill., Danville**—BA 9/18—Veterans Admin., Munitions Bldg., Wash., D. C., water distribution system improvements, Veterans Admin. Hospital.

BUILDINGS—BA

O., Boardman—SCHOOL—BA 8/23—Bd. Educ., Mrs. Mildred DeJane, clk., New England Lanes Grade School. Plans deposit $25. Kling & Frost, 661 Wick Ave., Youngstown, archts. CD 11/14/55.

Ill., Breese—SCHOOL—BA 8/24—Mater Dei High School, Inc., Rev. Henry H. Aydt, pres., c/o Chancery Office, Diocese of Belleville, 222 S. 3 St., Belleville, 4 story, 62x210 ft. brick, stone, masonry blocks, conc., steel, high school north of Rte. 50 between Breese Cemetery Rd. and North Plum St. $350,000. Paul J. Saunders, 3232 State St., East St. Louis, archt. John P. Nix, 25 S. Bemiston St., Clayton 5, Mo., struc. engr. John D. Falvey, 316 N. 8 St., St. Louis 1, Mo., mech. engr.

O., Stow—SCHOOLS—BA 8/28—Bd. Educ., High School, Proj. A, Woodland Grade School addn.; Proj. B, Riverview Grade School addn. Plans deposit $20. W. B. Ruff & Assoc., 1054 N. Main St., Akron, Zone 10, archts. CD 5/16.

Wis., Hartford—ARMORY—BA 8/28—Wis. National Guard, Truax Field, Madison, 1 story, 114x175 ft. conc., steel, brick and block armory. R. D. Culbertson, state engr.

Ind., Clermont—POWER PLANT—BA 8/29—State, Wm. Clarkson Dir., Div. Pub. Wks. & Supply, 301 State House Indianapolis, power plant, Indiana Girl's School Clermont. Plans deposit $35. Fleck, Quebe & Reid Assocs., Inc., 1637 N. Illinois St., Indianapolis, Zone 2, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,
O.—**D. W. Winkelman Co., Inc.**, 205 Harrison St., Syracuse, N. Y. CA **$3,221,748**, est. $3,308,300. Type T-71 and structures 7.268 mi., S.R. 82, Sect. 12.87, Howland and Vienna Twps., and city of Warren, Trumbull Co.;
O.—**John R. Jurgensen Co.**, Round Bottom Rd., Newtown, O. CA **$99,270**, est. $130,200. Type T-30, B-35, T-35, USR 25-16.69, 16.82, 17.02, 18.13, 23.19 (Pt.), Montgomery Co.; CA **$369,124**, est. $403,700. Type T-35 2.15 mi., U.S.R. 68, Sect. 24.50, F-644 (6), Scott Twp., Brown Co.;
O.—**The Wm. L. Schloss Paving Co.**, 9521 Woodland Ave., Cleveland, O. CA **$419,305**, est. $444,300. Type T-35, 3.566 mi., S.R. 306, Sects. 12.07, 0.00, S-46 (5), Chester Twp., and Kirtland Twp., Geaugo and Lake Counties;
O.—**Hinton Constr. Co.**, Celina, O. CA **$801,328**, est. $863,000. Type T-35 and structures 5.013 mi., S.R. 47, Sect. (15.95-20.87), S-1047 (4), city of Sidney, village of Port Jefferson and in Clinton and Salem Twps., Shelby Co.;
O.—**Tri-State Asphalt Corp.**, S. Broadway, Martins Ferry, O. CA **$109,271**, est. $110,000. Type T-35 2.793 mi., S.R. 39, Sects. (10.89-13.50), Yellow Creek Twp. and city of Wellsville, Columbiana Co.;
O.—**Joe D. Miller**, 19 Locust St., Gallipolis, O. CA **$103,098**, est. $111,300. Type T-32 0.537 mi., S.R. 218, Sect. 3.53, S.R. 553, Sect. 2.27 S-1121 (4), Guyan Twp., Gallia Co.;
O.—Rome **Daugherty**, Glenford, O. CA **$73,566**, est. $89,900, Type T-35 and structures 0.12 mi., S.R. 555, Sect. 8.63, Brush Creek and Wayne Twps., Muskingum Co.;
O.—**George A. Stein Contg. Co., Inc.**, 355 W. Fifth St., Chillicothe, O. CA **$178,323**, est. $165,100. Type T-35 0.577 mi., S. R. 674, Sect. 2.53, Madison Twp., Franklin Co.;
O.—**Miller Brothers, Inc.**, Archbold, O. CA **$289,150**, est. $368,800. Type T-35 2.679 mi., U.S.R. 224, Sects. (5.25-5.55) Blanchard and Liberty Twps., Hancock Co.;
O.—**Brewer & Brewer Sons, Inc.**, P.O. Box 88, Chillicothe, O. CA **$264,944**, est. $266,100. Type T-35, S.R. 125 Sect. (2.71-3.86), F-116 (5), Clark Twp. and village of Hamersville, Brown Co. Bids July 24. Grand total $5,929,127. CD 7/11.

OHIO—**State Hy. Dpt.**, Columbus, Zone 15, rejected bids July 24, Type T-35 1.336 mi., U.S.R. 422, Sect. 3.72, city of Youngstown, Mahoning Co., LB **$528,692**;
cancelled bids July 24, Type T-71 and structure 0.341 mi., U.S.R. 42R, Sec. 17.43, city of Cleveland, Cuyahoga Co. CD 7/11.

DeLuca Constr. Co., 1055 Grant St., Akron, O. CA **$136,870**. Bye St. storm sewer incl. rein.-con. pipe 72-in. high and 113-in. across, 1,684 ft. long, along Bye St. from Seward Ave. to Frederick Blvd. and Frederick Blvd. from Bye to Good Park Blvd., AKRON, O. City, Leo Walter, service dir., City Hall, Akron, O. Awarded July 24. CD 11/6/53.

Omer Brandon & Son, Trenton, Mich. LB **$114,881**. est. $133,871 (6 bidders) water line expansion program, BELLEVUE, O. City, City Hall, Bellevue, O. Bids July 30.

W. L. Harper Co., 2910 Highland Ave., Norwood, O. CA Est. **$130,000**. sewer lines in West Side Miles Rd. near Adams Rd. approx. 2,000 ft., CINCINNATI, O. Second Cincinnati Builders, 3818 North Bend Rd., Cincinnati, O. E. J. Nieneier, c/o owner, engr. Awarded Aug. 2.

Foley Constr. Co., 5050 Orchard St., Cincinnati, O. LB **$793,190**. (2 bidders) Sect. 4, East Branch Ohio River interceptor, approx. 6,400 lin. ft. regulator chamber, CINCINNATI, O. City, City Hall, Cincinnati, O. Bids July 31. CD 7/12.

George Constr. Co., 3418 George St., Cleveland 29, O. LB **$81,085**, est. $75,000. (2 bidders) removing existing mains and temporary mains at Innter Belt Freeway, CLEVELAND, O. City, Dpt. P. Utilities, Frank J. Schwemler, Comr., City Hall, Cleveland 14, O. Bids July 13.

Hannon & Nouzak, 3501 Oakes Rd., Brecksville, O. LB **$48,357**. est. $48,371 (3 bidders) waterline in Stone Rd., INDEPENDENCE, O. Village, 6675 Brecksville Rd., Cleveland 31, O. Bids July 30. CD 7/19.

C. D. Webb & Sons Co., Springboro Pike, Dayton, O. CA **$139,730**. est. $146,000 streets, repaving Woodman Dr. from Dorothy Lane to Patterson Rd., 2-lane concrete surface, KETTERING, O. Village, Ervin L. Welch, city mgr., Kettering, O. Awarded Aug. 1. CD 6/14.

Walton & Voorheis, Forest, O. LB **$303,114**. est. $332,900 (5 bidders) storm sewers in Dist. I and V, OBERLIN, O. City, City Hall, Oberlin, O. Awarded July 30. CD 8/30/55.

Lee Hoffman, 415 N.W. Cedar St., P. O. Box 37, Beaverton, Ore. CA dam and salt water barrier for pulp and paper mill, TOLEDO, O. R. E. Georgia-Pacific Paper Co., P. O. Box 311, Portland 7, Ore. Bids June 29. CD 6/21.

▲ **National Eng. & Contg. Co.**, 1968 W. Third St., Cleveland 13, O. LB **$1,010,064**. est. $933,000 (2 bidders) Contr. A, sewage plant only, Willoughby-Eastlake sewage disposal system, WILLOUGHBY, O. City, City Hall, Willoughby, O. Bids July 30. CD 7/9.

Pioneer Paving & Constr. Co., 1501 S. Green Rd., Cleveland, O. LB **$140,306** (2 bidders) grading, draining, paving and resurf. Lost Nation Rd., WILLOUGHBY, O. City, City Hall, Willoughby, O. Clifford S. Fullerton, engr. Bids Aug. 2. CD 11/11/55.

ILLINOIS—State Div. Hys., Springfield,
Kenny Constr. Co., 3220 Oakton St., Skokie, Ill., CA **$581,774**. storm sewer 1.05 mi. Congress St. Expressway, Du Page Co. Bids July 6. CD 6/28.

▲ **Allied Structural Steel Co.**, 20 N. Wacker Dr., Chicago, Ill., LB **$3,893,545**. Contract 1-C-2 and 1-C-3, furnishing, fabricating, erecting structural steel (main ramps into Michigan Ave. and Indiana Ave.) Calumet Skyway Toll Bridge, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids July 23. CD 6/28.

Standard Paving Co., 308 W. Washington St., Chicago, Ill., LB **$478,784**. bit. paving N. Laramie Ave. from W. Fullerton to Sunnyside Aves., CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids July 30.

Gallagher Asphalt Co., 181 Indiana St., Thornton, Ill., LB **$105,923**. paving 940 E. 132 St., Altgeld Gardens, CHICAGO, ILL. Chicago Housing Auth., 608 S. Dearborn St., Chicago, Ill.

▲ **Michael Pontarelli Inc.**, 4248 N. Kilpatrick St., Chicago, Ill., CA **$1,214,526**. Roscoe auxiliary sewers between Long & Melvina Ave., CHICAGO, ILL. Bids May 28. CD 6/8, under LB.

Union Contg. & Eng. Co., 2035 W. 43 St., Chicago, Ill., LB **$466,296** paving South State St. from 43 to Polk Sts., CHICAGO, ILL. City, City Hall, Chicago, Ill.

(Continued on page 122)

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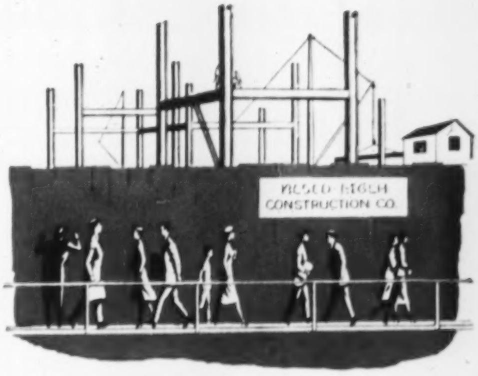
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(Continued from page 120)

R. L. O'Neill, 6466 N. Oakley Blvd., Chicago, Ill., LB **$144,750**. sewage treatment plant addn. ROSELLE, ILL. Village, Village Hall, Roselle, Ill. CD 1/31.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison,

L. G. Arnold Inc., P. O. Box 228, Eau Claire, Wis., CA **$1,333,144**. grading, base, pavement, storm sewer 4.021 mi. Contracts 1, 1 and 2, U. S. Hy. 53, U-08-4 (27), F 08-4 (28) and U 4602 (9) Eau Claire and Chippewa Counties. Bids June 28. CD 7/5, under LB.

Mullen Constr. Co., 2002 E. Wisconsin Ave., Appleton, Wis., LB **$147,751** (3 bidders) 110 mi. rural telephone lines, Marathon Co. **WISCONSIN. Mosinee** Telephone Co., Mosinee, Wis. Bids July 26. CD 7/26.

Sarrington Milling Co., Lake Delton, Wis., LB **$103,240**, airport paving, FOND DU LAC, WIS. Fond du Lac Co., Fond du Lac, Wis. Bids July 27.

White Constr. Co., 2543 W. Greves Ave., Milwaukee, Wis., CA **$123,000** (4 bidders) asph. paving W. Teutonia Ave., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids July 27, awarded Aug. 1.

Volpano & Sawyer, 739 W. St. Paul Ave., Waukesha, Wis., LB **$109,963**. sanitary and storm sewers, SUSSEX, WIS. Village, Sussex, Wis. Bids July 26. CD 7/13.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Mich.—**Holloway Constr. Co.**, Grosse Pointe Woods, Mich. and **Denton Constr. Co.**, 20415 Mack St., Grosse Pointe, Mich. CA **$2,234,824**. est $2,240,000. dual 24 ft. c. conc. 6.248 mi. on relocation US-23, B In 25-24 C--RO (B in 07-2-11), Genesee Co.;

Mich.—**L. W. Edison Co.**, 924 Floral Dr. S.E., Grand Rapids, Mich. CA **$879,575**. est. $920,000. c. conc. 4.837 mi. on US-131, 2.173 mi. on US-131, M 78-5 C8-RN, M 78-27 C3-Un, St. Joseph. CD 8/1, under LB.

BUILDINGS—LB & CA

F. & Y. Building Service Co., 319 E. Town St., Columbus, O. CA Est. **$100,000**. 10,000 sq. ft. FACTORY addn., BELLEFONTAINE, O. Detroit Aluminum and Brass Co., Bellefontaine, O.

Whitehead & Kales Co., River Rouge, Mich. CA structural steel contract for 1,500,000 sq. ft. assembly PLANT in Brownhelm Twp., LORAIN, O. Ford Motor Co., American Rd., **Dearborn, Mich. Awarded Aug. 1.** CD 7/16.

▲ **H. L. Vokes Co.**, 1000 Wayside Rd., Cleveland 10, O. CA Est. **$1,000,000**. design and construct 1 story, brick, concrete, 170,000 sq. ft. wholesale WAREHOUSE, MAPLE HEIGHTS, O. Seaway Wholesale Grocery Co., Sol Borstein, pres. 4500 Gladstone St., Cleveland 4, O. Awarded July 17.

Austin Co., 16112 Euclid St., Cleveland, O. LB Est. **$93,000**. 100 ft. high FACTORY addn. to house powder chamber connecting to present plant at east end of plant. MARYSVILLE, O. Nestle, Inc., Geo. Beaecher, **Mgr., Marysville, O.**

F. E. Murphy, 16000 Madison Ave., Cleveland 7, O. Own Forces Est. **$350,000-$400,000**. 48-unit brick MOTEL north of turnpike interchange on Rte. 42, STRONGVILLE, O. Damon, Worley, Samuels & Assoc., Engineers Bldg., Cleveland 14, O., archts. Awarded July 24.

A. J. L. Simmons Co. Inc., Inland Bldg., Indianapolis, Ind., CA **$4,532,835**. University MEMORIAL UNION BLDG. addn., BLOOMINGTON, IND. Bd. Trustees, Indiana University, **Bloomington, Ind. Awarded July 27. CD 5/8.**

Paul E. Schletcher & Sons Inc., 541 Washington St., Gary, Ind., CA **$537,605. 1 story,** bsmnt., brick Terrytown Elementary SCHOOL, 21 and Whitcomb Sts., GARY, IND. School City of Gary, 524 Garfield **St., Gary, Ind. Bids July 24. CD 8/2, under LB.**

Superior Constr. Co., 1900 E. Seventh Ave., Gary, Ind., CA $500,000. 5 story OFFICE and 16-unit store, 475 Broadway, GARY, IND. Sun Loan Corp., 479 Broadway, Gary, **Ind. Wildermuth & Wildermuth, 527** Broadway, archts.

Eugene S. Babilla Inc., 578 Broadway, Gary, Ind. LB **$578,167**, 1 story, brick, concrete Franklin Elementary SCHOOL, 35 and Georgia Sts., GARY, IND. School City of Gary, 524 Garfield St., Gary, **Ind. CD 8/18/55.**

Prosser Howell Inc., 5031 Broadway, Gary, Ind., LB **$465,000**. bottling PLANT and parking lot, Colfax Ave. from 9 to 11 Sts., GARY, IND. Coca-Cola Bottling Co., 933 Madison St., Gary, Ind. **Bids July 31.** CD 7/30.

▲ **Carl M. Geupel Constr. Co., Inc.**, 1919 N. Meridian St., Indianapolis, Ind. CA Est. **$1,000,000**. design and construct, DISTRIBUTION CENTER, HAGERSTOWN, IND. Perfect Circle **Corp., Hagerstown, Ind.** CD 8/8.

Velso Constr. Co., 2434 W. Fletcher St., Chicago, Ill. CA $500,000. 3 story, bsmnt., brick OFFICE, 679 N. Michigan Ave., CHICAGO, ILL. Chicago Title & Trust Co., 111 W. Washington St., Chicago, Ill. Leichenko & Assocs., 225 N. Michigan **Ave., archts.**

Dahl Stedman Co., 7 S. Dearborn St., Chicago, Ill., CA **$350,000**. BANK addn., CHICAGO, ILL. Lakeview Trust & Savings Bank, 3201 N. Ashland Ave., Chicago, Ill. J. L. McConnell & Assocs., 53 W. Jackson Blvd., Chicago, archts.

John Traff, 5735 N. Clark St., Chicago, Ill., CA **$781,589**. high SCHOOL addn., MIDLOTHIAN, ILL. Bremen Community High School Dist. 228, 15201 Crawford Ave., Midlothian, Ill. CD 7/31, under LB.

Siesel Constr. Co., 504 E. Ogden Ave., Milwaukee, Wis., CA **$125,965**, general contract, X-ray TEST bldg., WEST MILWAUKEE, WIS. General Electric Co., 4856 W. Electric Ave., Milwaukee, Wis. Darby, Rogner & Assocs., 759 N. Milwaukee St., Milwaukee, engr.-archt. Bids July 23.

City, Bd. Educ., Amos F. Gregory, secy., Chester and Martin Sts., Birmingham, Mich., rejected bids July 2. Midvale Elementary School, BIRMINGHAM, MICH. CD 7/12, under LB.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Minnesota**—BA About 8/28—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul, Zone 1, erosion control and excavation Aitkin Flood Diversion Channel, Mississippi River, near Aitkin, CIVENG 21-018-57-15.

Tex., Carthage—BA 8/29—Panola Co. Fresh Water Dist. No. 1, W. C. Smith, earthfill dam and spillway, and relocation FM Rd. 1971, on Murvaul Bayou, $100,000. Plans deposit $20. Forrest & Cotton, 803 Praetorian Bldg., Dallas, consult. engrs. CD 9/7/54.

† **Minnesota**—BA 8/30—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul, Zone 1, harbor imprvs., Knife River Harbor, Lake Superior, Lake Co., CIVENG-21-018-57-12. CD 8/1.

† **North Dakota**—BA 8/30—U. S. Eng., Riverdale, **reservoir** access roads, Stage II, Garrison Dam and reservoir proj., Mercer, McLean and Mountrail Counties, Inv. 32-015-57-8. CD 8/2.

Tex., Tyler—BA 9/4—City, 24- to 36-in. watermains; raising 500,000 gal. elev. tank; 72-in. standpipe exten. $75,000. Wisenbaker, Fix & Assocs., 1500 Peoples State Bank Bldg., consult. engrs. CD 8/25/55.

Neb., Omaha—COFFERDAM—BA 9/6—Omaha Public Power District, 17 and Harney Sts., Contr. No. 251, installing cofferdam and other sheet piling, excav. for units No. 3 and 4 removing present cofferdam conveyer vent, all for Unit No. 3 addn. to North Omaha Power Station, Pioneer Service & Engr. Co., 231 S. LaSalle St., Chicago, Ill., engr. CD 8/17/51, under Public Buildings.

† **South Dakota**—ANTENNA TOWERS, etc.—BA 9/6—Bureau Reclamation, Dpt. Interior, Huron, S. D., antenna towers, buildings, underground power and communication lines for relay stations. 12 sites in South Dakota. Spec. No. 602C-16. Adv. ENR 8/16.

† **Minn., Duluth**—SUPPORT TAXIWAY—Bids Asked—Purch. & Contg. Office, 343 Fighter Group, (ADEF) support taxiway. Duluth Municipal Airport.

BUILDINGS—BA

Tex., Sweetwater—SCHOOL—BA 8/24—Sweetwater Independent School Dist., masonry elementary school and 2 school additions, $400,000. Plans deposit $50. Chas. W. Welch and Con L. Hampton, Texas Bank Bldg., archts. CD 5/9.

▲ **Tex., Houston**—SCHOOL—BA 9/5—Houston Independent School Dist., 1300 Capitol St., 155,000 sq. ft. floor space masonry junior high school, Sunnyside-Grimes area, $2,000,000. Stayton Nunn, 3272 Westheimer St., co-ord archt.; Emory S. White and Arne Engberg, 2017 S. Shepherd St., archts. R. L. Jenkins, 2622 Richmond St., and Walter P. Moore, 2 Pinedale St., consult. engrs. CD 3/30.

Mo., Affton (St. Louis 23 P.O.)—SCHOOL—BA About 9/6—Lutheran Assn. for Higher Learning, Lutheran High School, 455 Lake Ave., St. Louis, Zone 12, 1 story, 47,000 sq. ft. brick, masonry high school, Tesson Ferry Rd. south of Gravois Rd., $650,000. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, engr.-archt. CD 3/16/55.

Mo., Normandy (St. Louis 21 P.O.)—BA About 9/6—Lutheran Assn. for Higher Learning, c/o Lutheran High School, 455 Lake Ave., St. Louis, Zone 12, 1 story, brick, masonry, steel, 43,000 sq. ft. high school, Lucas and Hunt Rd. between Lucas and Hunt Village and Norwood Country Club, $650,000. Kenneth E. Wischmeyer, Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, archt. CD 3/16/55.

Neb., Omaha—POWER HOUSE—BA 9/6—Omaha Public Power District, 17 and Harney Sts., Contr. No. 242, structural steel for power house for Unit No. 3 addn. to North Omaha Station. Pioneer Service & Eng. Co., 231 S. LaSalle St., Chicago, Ill., engr. CD 8/17/51.

N. M., Las Cruces—HOUSING—BA About 9/14—U. S. Eng., P. O. Box 1538, Albuquerque, construct and finance, 134 housing units, (Capehart), White Sands Proving Ground, Eng. 29-005-57-15.

▲† **Iowa, Council Bluffs**—POST OFFICE AND COURT HOUSE—BA 9/18—General Services Admin., Pub. Bldgs. Service, Regional Office, 2306 East Bannister Rd., Kansas City, Mo., post office and court house, $1,630,000. Robert C. Robinson, 310 Park Bldg., and Brooks Borg, 815 Hubbell Bldg., Des Moines, archts. CD 7/16, under LB.

BUILDINGS—SLC

Minn., Mountain Lake — CREAMERY — Land O'Lakes Creameries, Inc., L. Getten, prod. mgr., 2215 N.E. Kennedy St., Minneapolis, soon lets contract, 1 story, 85x120 ft., creamery and milk drying plant, $400,000. M & G Buetown, 1931 University Ave., St. Paul, archts. CD 7/26.

Mo., Berkeley (St. Louis 21 P.O.)—SCHOOL ADDN Holy Ghost Catholic Parish, Rev. Francis M. Doyle, pastor, 5314 Garfield Ave., Berkeley, Zone 21, and Archdiocesan Comn., Rev. James. R Hartnett, exec. secy., 3810 Lindell Blvd., St. Louis, Zone 8, soon lets contract 2-level 32x100 ft., brick, steel, concrete parochial school addn. Hellmuth, Obata & Kassabaum, 315 N. 10 St., St. Louis, Zone 1, archts. CD 8/1/55.

Tex., Corpus Christi—WAREHOUSE—Braslau Furniture Co., 1001 Leopard St., soon lets contract, 17,000 sq. ft. brick, tile, steel frame warehousing, storage, display, $125,000. Jos. Hans, 614 Elizabeth St., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **Barbarossa-Nodland**, St. Cloud, Minn. LB **$1,137,540**. (4 bidders) storm sewer Proj. No. 4, BLOOMINGTON (P. O. MINNEAPOLIS), MINN. Village. R. E. Kossum, clk., Bloomington, Minn. Bids Aug. 3. CD 7/19.
Phelps-Drake Co., 1415 S. E. Eighth St., Minneapolis, Minn. LB **$149,306** (3 bidders) storm sewer, Proj. No. 3 (Bloomington, Minn.).

C. W. Frank, Winona, Minn. CA, **$51,822**. watermains, PRESTON, MINN. Village, C. P. Grebin, clk., Preston, Minn. Bids June 19. CD 6/1.

Spot Martin Contractors, 3001 E. 83 St., Kansas City, Mo. CA **$227,600**. runway taxiway and apron facilities, Municipal Airport, JOPLIN, MO. City, Joplin, Mo. Bids July 30. CD 7/23.

Eastmount Constr. Co., 705 E. Linwood Blvd., Kansas City, Mo. CA **$419,950**. water lines from Brush Creek and Benton Blvd. to Blue Ridge Rd., KANSAS CITY, MO. City, City Hall, Kansas City, Mo. Bids July 31. CD 1/30.

Vic Koch Excavating Co., 11829 E. Gill St., Independence, Mo. CA **$467,475**. est. $550,00. sewage disposal plant, 2 lift stations, sewer trunk lines, force mains, TRENTON, MO. City, Trenton, Mo. Bids Aug. 1. CD 7/24.

▲ **NORTH DAKOTA**—State Hy. Dpt., Bismarck,

N. D.—**Northern Improvement Co.**, 633 First Ave. N., Fargo, N. D. CA **$1,021,153**. grading, base, c. conc. surf. 3.641 mi., Proj. F 137 (35), and U-137 (34), Cass Co.;

N. D.—**W. H. Noel Co.**, Jamestown, N. D. and **Wm. Collins & Sons, Inc.**, 606 Black Bldg., Fargo, N. D. CA **$734,997**. grading, bit. treated base, structure 21.79 mi., Proj. S 390 (13), McHenry Co. Bids July 27. CD 8/6, under LB.

Chambers Constr. Co., 621 Trust Bldg., Lincoln, Neb. LB $47,403. watermains, Park Manor, LINCOLN, NEB. City, City Hall, Lincoln, Neb. Carl Fisher, city **engr. Bids Aug. 1. CD 5/12/53.**

▲ **D. C. Bass & Sons**, Enid, Okla. LB **$1,362,225**. general constr., HIGH SCHOOL, JUNCTION CITY, KAN. Bd. Educ., Junction City, Kan. Bids July 17. CD 7/3;
Woodhull Plumbing Co., Manhattan, Kan. LB **$364,547**. mechanical work. (Junction City, Kan.).

Carrothers Constr. Co., Paola, Kan. CA, **$256,675**. WW imprvs., MANHATTAN, KAN. City, Manhattan, Kan. Bids July 17. CD 12/6/55.

† **Atlantic, Gulf & Pacific Co.**, 15 Park Row, New York 38, N. Y., CA **$585,358**. dredging Peggy Lake to Greens Bayou on Ship Channel, CIVENG 41-243-56-77. TEXAS. U. S. Engr., 606 Santa Fe Bldg., Galveston, Tex. Bids July 20. CD 8/2, under LB.

▲† **F. & C. Engineering Corp.**, 3018 Leeland St., Houston, Tex. CA **$1,023,020**. airfield pavement and facilities, Biggs Air Force Base, Eng. 29-055-56-97, EL PASO, TEX., U. S. Eng., Box 1538 Albuquerque, N. M. Bids July 12. CD 7/23, under LB.

▲† **Texas Bitulithic Co.**, Box 1807, Fort Worth, Tex., LB **$1,477,107**. runway extens., Carswell Air Force Base, ENG-41-443-56-87 FORT WORTH, TEX. U. S. Eng., P. O. Box 1600, Fort Worth, Tex. Bids July 31. CD 8/3, under LB.

▲† **Burnett Constr. Co.**, Box 336, Corpus Christi, Tex., CA **$1,383,400**. aircraft maintenance hangar, Naval Aux. Air Station, NOY 91222, KINGSVILLE, TEX. Officer in Charge of Constr., Naval Air Advance Training Command, Naval Air Station, Corpus Christi, Tex. Bids July 17. CD 8/1, under LB.

City, Pasadena, Tex., Own forces, **$60,000**. some water lines, PASADENA, TEX. CD 9/22/55.

City, Pasadena, Tex., Own forces, **$80,000** some sanitary sewer lines; **$85,000**. some storm sewers PASADENA, TEX. CD 9/22/55.

COLORADO—State Hy. Dpt., 4201 E. Arkansas St., Denver,
Shore Constr. Co., Littleton, Colo., CA **$88,185**. grading, structures, asph. surf. 4.001 mi. C29-0194-06, Otero and Bent Counties. Bids Aug. 3, awarded Aug. 3. CD 7/25.

COLORADO—State Hy. Dpt., 4201 E. Arkansas St., Denver,
Gardner Constr. Co., Glenwood Springs, Colo., CA **$369,550**. grading, stab. structures, plant mix asph. surf. 1.138 mi. Colo. Proj. F 001-1 (12) Mesa Co. Bids July 31, awarded Aug. 3. CD 7/25.

BUILDINGS—LB & CA

▲ **Thomas Constr. Co.**, 901 Faraon St., St. Joseph, Mo., CA **$1,417,417**, general contract HIGH SCHOOL and junior college, FORT DODGE, IOWA. Bd. of Educ., Fort Dodge, Iowa. Bids July 19. CD 8/3, under LB.

James C. Garland, 5830 Mission Dr., Kansas City, Mo., Owner Builds. **$500,000.** twenty-nine 1½ story DWE IGS, 75 and Fairway Sts., KANSAS CITY, MO.

C. Rallo Contg. Co., 5000 Kemper Ave., St. Louis 9, Mo. CA, **$441,067**. general constr., Senior High SCHOOL addns., Dougherty Fergy Rd. and Essex Ave., KIRKWOOD (ST. LOUIS 22 P. O.), MO. Kirkwood School Dist. R-7, Bd. Directors, Alva L. Crow, Supt. Schools, 516 S. Kirkwood Rd., Kirkwood 22, Mo. CD **7/12,** under LB.

Parsons Constr. Co., 2512 Deer Park Blvd., Omaha, Neb. LB **$321,584.** concrete constr. of sub-structure of POWER PLANT, LEXINGTON, NEB. Central Nebraska Pub. Power & Irrigation Dist., Hastings, Neb. Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill., engrs. Bids Aug. 1.

National Valve & Mfg. Co., 3101 Liberty Ave., Pittsburgh, Pa. LB **$460,349**. prim piping. (Lexington, Neb.).

Moor Associates, 217 W. Sixth St., Lawrence, Kan. Owner Builds. Est. **$800,000.** 100 HOUSES, LAWRENCE, KAN. Ford, Robertson & Erickson, Lawrence, Kan., archts.

H. Sam Clark, partner in Clark Bros. Constr. Co., 13827 Botts Rd., Kansas City, Mo. Owner Builds. **$750,000.** SHOPPING CENTER, residential center, Kansas Hy. 7 and Elm Sts., OLATHE, KAN.

Marlang-Stefford Co., Box 463, Sherman, Tex. CA **$589,691**. est. $550,000. Bryan County HOSPITAL and health center, DURANT, OKLA. Bryan Co., Durant, Okla. Awarded July 24. CD 6/20, under LB.

Manhattan Constr. Co., 1804 Classen St., Oklahoma City 6, Okla. CA Est. **$375,000.** 30,000 sq. ft. RETAIL STORE at S. W. 44 and Western Sts., OKLAHOMA CITY, OKLA. S. N. Goldman, 16 S. Penn St., Oklahoma City, Okla. Sorey, Hill & Sorey, 809 N. W. 36 St., Oklahoma City, Okla., archts. Awarded July 31.

Ramey Constr. Co., Box 6, Amarillo, Tex., LB **$469,495**. girls DORMITORY, CANYON, TEX. Bd. Regents, State Teachers College, Admin. Bldg., Austin, Tex. Bids Aug. 2. CD 7/26.

Busboom & Rauh, 6910 Forest Park Dr., Dallas, Tex., CA **$799,630**. 97-unit Holiday INN, DALLAS, TEX. The Tex-Mex Corp., 833 Fidelity Union Bldg., Dallas, Tex. Bids July 20. CD 8/3, under LB.

Sharp & Co., Inc., 3201 Oak Grove St., Dallas, Tex., Own Forces, **$359,120**. 28 DWELLINGS **$368,119**. 34 dwellings, GRAND PRAIRIE, TEX. CD 6/14.

▲ **Jas. Mallette and B. Bell Jr., Builders**, 11909 Kimbarley Lane, Houston, Tex., CA, **$352,000**. 32 DWELLINGS; **$374,000.** 34 DWELLINGS; **$378,000**. 27 dwellings, HOUSTON, TEX. Jas. Mallette and Bruce Belin Jr., 11909 Kimbarley Lane, Houston, Tex. Grand total $1,104,000. CD 5/29.

Wilbur Fite & Clarence Thorn, c/o Johnson, Dempsey & Collins, 918 Manor Dr., San Antonio, Owner Builds, **$350,000**. SHOPPING CENTER, SAN ANTONIO, TEX. CD 7/6.

▲ **Hughes Development Co.**, Pampa, Tex., Owner Builds. **$368,125**. 34 DWELLINGS; **$349,110**. 30 dwellings; **$356,120**. 32 dwellings, WICHITA FALLS, TEX. Grand total $1,073,355. CD 7/25.

Barbour Constr. Co., 2700 N. Avenue, Grand Junction, Colo., LB **$519,440**. 2 story, part bsmnt., 30,680 sq. ft. COURT HOUSE, DELTA, COLO. Delta Co. Comrs., City Hall, Delta, Colo. Bids Aug. 1. CD 7/13.

Ft. Lewis A. & M. College, Hesperus, Colo., rejected bids July 24, entire new COLLEGE campus, DURANGO, COLO. LB **$884,980**. CD 7/13.

H. W. Houston, Pueblo, Colo., LB **$715,233**. general contract, 1 story bsmnt., 101,500 sq. ft. SHOPPING CENTER, 3000 car parking. PUEBLO, COLO. Pueblo Shopping Center, Inc. c/o T. H. Buell & Co., archt., 730 14 St., Denver, Colo. Bids July 31. CD 5/20/55.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Washington**—BA 8/28—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., 4 vertical-shaft, turbine-type and 7 horizontal, centrifugal-type pumping units for Brewster Flat pumping plants, Chief Joseph Proj. Foster Creek Div. Spec. DS 4723. Extended date. CD 7/5.

† **Arizona—Utah**—BA 9/6—Bureau Reclamation, Dpt. Interior, Kanab, Utah, Waterholes Canyon Bridge for access hy. Glen Canyon Dam, Colorado River Storage Proj. in Navajo Indian Reservation, Coconino Co., Spec. DC 4746. adv. ENR 8/16. CD 4/27.

† **Arizona—Utah**—BA 9/11—Bureau Reclamation, Dpt. Interior, Kanab, Utah, Glen Canyon Dam right diversion tunnel, Middle River Division, Colorado River Storage Proj., on Colorado River near Lees Ferry Spec. DC 4747. adv. ENR 8/16. CD 4/27.

† **Idaho**—BA 9/11—Bureau Reclamation, Dpt. Interior, Central Snake Projects office, 214 Broadway, Boise, Idaho, Black Canyon Main Canal headworks alterations, near Emmett, Gem Co., Payette Div., Boise Proj. Spec. DC 4741.

† **Arizona California Nevada**—BA 9/18—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver 2, Colo., furnishing one 12-in. floating, cutter-head type, hydraulic suction dredge with floating and land discharge pipe line for Lower Colorado River, Colorado River Front Work and Levee System, Spec. DS 4745. adv. ENR 8/16. CD 4/27.

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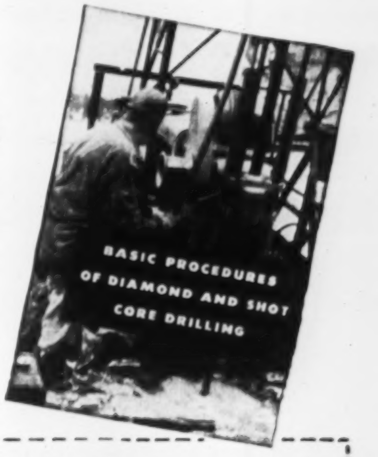

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BUILDINGS—BA

▲ **Utah, Salt Lake City**—OFFICE BLDG.—BA 8/30—Mountain Fuel Supply Co., 36 S. State St., 4 story and bsmnt. office bldg. at First South and Second East Sts., $1,500,000. Hodgson and Holbrook, 417 Kiesel Bldg., Ogden, archts. CD 1/30.

▲ **Ariz., Yuma**—HOUSING—BA 9/6—Procurement Office, Air Defense Wing, Yuma Air Force Base, Yuma, construct and finance 320-family housing units of armed services housing, Yuma Air Force Base, Inv. No. 02-606-57-7 $3,750,000. Plans deposit $50. Charles G. Polacek, 2803 7 St., Phoenix, archt. CD 8/6.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise,
Twin Falls Constr. Co., Twin Falls, Idaho, CA, **$622,111**. reconstr. roadway, bit. 13.541 mi. State Hy. 25 and maint. stockpiles, Jerome Co. Bids July 24. CD 8/3, under LB.

IDAHO—State Hy. Dpt., Boise,
J. F. Koven Constr. Co., Lewiston, Idaho, LB **$91,463**, reconditioning roadway, base, bit. 4.708 mi. Latah Co.;
received no bids July 31, surf. bit. surf. 3.581 mi. Woodville-North Road, Bingham & Bonneville Counties.

▲ **Arundel Corp.**, Pier 2, Pratt St., Baltimore, Md., **L. E. Dixon Co.**, 18404 Sherman Way, Reseda, Calif., **The Hunkin-Conkey Constr. Co.**, 1740 E. 12 St., Cleveland, O., and **American Pipe & Constr. Co.**, 4635 Firestone St., South Gate, Calif., CA, **$12,048,091**. (5 bidders) first unit of Rocky Reach hydrodam, incl. first-stage cofferdam, left abutment, etc. Wenatchee, WASHINGTON Chelan County Public Utility Dist., 327 N. Wenatchee Ave., Wenatchee, Wash. Bids July 18, CD 7/23, under LB.

CALIFORNIA—State Div. Hys., 1120 N St., Sacramento,
Rett Co., West Capitol Ave., West Sacramento, Calif., LB **$107,185**. (2 bidders) repairing 3 conc. box culverts along Long Valley Creek US 40 Alt. and US 395, Lassen Co. Bids Aug. 1. CD 7/10.

CALIFORNIA—State Div. Hys., 1120 N St., Sacramento;

Calif.—**Arthur B. Siri Inc.**, 1357 Cleveland Ave., Santa Rosa, Calif., LB **$339,754**. (2 bidders) roadbed at 12 locations 2.3 mi., Humboldt and Del Norte Counties;

Calif.—**M. J. Ruddy & Son**, Rte. 6, Box 1419A, Modesto, Calif., LB **$112,217** (3 bidders) grading, paving 2.1 mi. Rte. 1198, Merced Co.;

Calif.—**O. K. Mittry & Sons**, 15905 S. Broadway, Gardena, Calif., LB **$441,628** (15 bidders) grading, surf. 4.7 mi. Sign Rte. 120, Stanislaus Co.;

Calif.—**Rice Bros. Inc.**, 900 Victor Rd., Lodi, Calif., LB **$81,144** (3 bidders) surf. 3.5 mi. Sign Rte. 108, Tuolumne Co. Bids Aug. 1. CD 7/10.

† **Brighton Sand & Gravel Co.**, Perkins, Calif., CA, **$59,508**, surf. access roads and parking areas for right abutment at Folsom Dam, Central Valley Proj. American River div., Spec. 200C-322, CALIFORNIA Bureau Reclamation, Dpt. Interior, Folsom, Calif. Bids July 24, awarded July 30.

† **Bureau Reclamation**, Dpt. Interior, Red Bluff, Calif. rejected bids May 28, railroad and highway siphon for Corning Canal, Sacramento Canals unit, Central Valley Proj., Spec. DC 4688 CALIFORNIA. CD 6/7, under LB.

Utah Constr. Co., 100 Bush St., San Francisco, Calif., LB **$295,250** (1 bidder) hydraulic dredge fill at Washington Park Tidelands area, ALAMEDA, CALIF. City, City Hall, Alameda, Calif. CD 2/21/45.

Pisano Brothers, 1800 De La Cruz Blvd., Santa Clara, Calif., LB **$99,970**, sanitary sewers and pumping stations, San Juan Sewer Dist. BELMONT, CALIF. City, City Hall, Belmont, Calif. Murphy & Hastings, 650 El Camino Real, Redwood City, engrs.

Chorak Constr. Co., 649 S. Maple Ave., Montbello, Calif., CA, **$189,961** (10 bidders) sanitary sewers in Annexation 21 and 22, COSTA MESA, CALIF. Costa Mesa Sanitary Dist., 116 E. 18 St., Costa Mesa, Calif. Bids July 27, awarded July 27. CD 7/6.

▲† **James Stewart Co.**, 411 N. Central Ave., Phoenix, Ariz., LB **$1,042,471**. (10 bidders) technical service and communication bldg., utilities, Edward Air Force Base, ENG-04-353-56-125. MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 3. CD 7/31.

McGillvray Constr. Co., P. O. Box 873, Sacramento, Calif., LB **$323,765** (5 bidders) reconstr. approx. 18 mi. roads, various locations, YUBA CITY, CALIF. Sutter Co. Court House, Yuba City, Calif. Bids July 27.

BUILDINGS—LB & CA

▲ **Western Knapp Eng. Co.**, 760 Folsom St., San Francisco, Calif., CA Est. **$3,000,000**. uranium processing MILL, FORD, WASH. Dawn Mining Co., Ford, Wash.

Charles F. Unger Co., 2210 Sutterville Rd., Sacramento, Calif., LB **$997,137** (4 bidders) junior high SCHOOL DEL PASO HEIGHTS, CALIF. Grant Union High School Dist., Grand Ave., Del Paso Heights, Calif. Bids Aug. 1. CD 7/19.

Bash-Ross Tool Co., 5112 S. Boyle Ave., Vernon, Calif. Owner Builds. **$251,600**. 50,400 sq. ft. INDUSTRIAL, 19215 S. Santa Fe Ave., DOMINGUEZ, CALIF. Caldwell, Mason & Mentz, 4575 Pacific Blvd., Vernon, archts.

Jeannero & Weston, 8138 Chestnut Ave., South Gate, Calif., LB **$374,681** 21,000 sq. ft. HOSPITAL ADDN. DOWNEY, CALIF. Downey Community Hospital, 8356 E. 5 St., Downey, Calif. Bids July 31. CD 2/21/55.

Donald F. Shaw, 1901 Blake Ave., Los Angeles, Calif., CA, **$205,000**. 47,600 sq. ft. WAREHOUSE, 6303 E. Corsair St., EAST LOS ANGELES, CALIF. B. B. and W. B. Malouf, 8487 W. 3 St., Los Angeles, Calif. Donald R. Warren, 930 Sunset Blvd., Los Angeles, engr.

Noyes Roach & C. L. Peck, 816 W. 5 St., Los Angeles, Calif., CA, **$714,800**. rein.-con. PARKING GARAGE, GLENDALE, CALIF. Sears, Roebuck & Co., 231 N. Orange Ave., Glendale, Calif.

Del E. Webb, 5101 San Fernando Rd., Los Angeles, Calif., CA, **$500,000**. 2½ story, 90x285 ft., brick OFFICE, 461 S. Boylston St., LOS ANGELES, CALIF. Union Square Bldg. Corp., 617 W. 7 St., Los Angeles, Calif. Pereira & Luckman, 9220 Sunset Blvd., archts.

Smith-Campbell Co., 6510 Cherry Ave., Long Beach, Calif., CA, **$648,000**. Eagle Rock High SCHOOL GYMNASIUM, LOS ANGELES, CALIF. Bd. of Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids July 12, awarded July 31. CD 7/23, under LB.

Bjerke-Nicholson Constr. Co., 1087 S. Plymouth St., Los Angeles, Calif., CA, **$110,000**. 145x186 ft. food PROCESSING storage bldg., 490 Bauchet St., LOS ANGELES, CALIF. Henry Kerwin, 648 Mateo St., Los Angeles, Calif. CD 3/1.

A. S. Holmes & Son Inc., 9300 G St., Oakland, Calif., CA, **$385,000**. 1 story, concrete WAREHOUSE, OAKLAND, CALIF. Haslett Warehouse Co., c/o contractor, Cecil Moyer, 315 15 St., Oakland, archt.

▲ **Vinnell Co. Inc.**, 1145 Westminister Ave., Alhambra, Calif., LB **$3,486,690**. (5 bidders) Permanent production flight facility, Air Force Plant No. 42, Contract No. 6, PALMDALE, CALIF. General Dynamics Corp., Convair Div., 3156 Pacific Hy., San Diego, Calif. Bids Aug 2. CD 7/19.

Wm. P. Neil Co., 4814 Loma Vista St., Los Angeles, Calif., CA, **$100,000**, 22,400 sq. ft. tilt-up FACTORY, POMONA, CALIF. Wayne Mfg. Co., 1201 E. Lexington St., Pomona, Calif.

Westco Bldg. Co. Inc., 338 S. Glendora Ave., West Covina, Calif., CA, **$573,000**. 41 frame, stucco DWELLINGS, Rudyard St., St. Malo Ave., PUENTE, CALIF. Stanley Homes, 338 S. Glendora Ave., West Covina, Calif.

Trepte Constr. Co., P. O. Box 1231, San Diego, Calif., LB **$860,926** (4 bidders) general contract, 2 and 3 story, CLASSROOM bldg., San Diego State College, SAN DIEGO, CALIF. State Div. Archt. 1100 S. Grand Ave., Los Angeles, Calif. Bids Aug. 1. CD 7/3.

Ralph Larsen & Son, 64 S. Park St., San Francisco 7, Calif., LB **$769,213** (3 bidders) general contract, CLASSROOM Bldg. No. 3, paving and site grading, SAN FRANCISCO, CALIF. State Div. Archt., 1120 N St., Sacramento, Calif. Bids July 31. CD 7/3.

A. J. Peters & Son, 534 Stockton Ave., San Jose, Calif., LB **$257,000** Base Bid; **$109,000** Alt. Bid, sanitary sewer sys., and water distr. sys. for plant, SAN JOSE, CALIF. International Business Machines Corp., 25 Battery St., San Francisco, Calif. John S. Bolles, Pier 5, San Francisco, archt. CD 1/13.

L. Sievers, 8759 Stewart & Gray Rd., Downey, Calif., Owner Builds, **$434,000**. 31 frame, stucco DWELLINGS, Tract 2980, SANTA ANA, CALIF.

Douglas Aircraft Co. Inc., 3000 Ocean Park Blvd., Santa Monica, Calif. Owner Builds, **$130,000**. Corrugated metal TEST TOWERS, SANTA MONICA, CALIF.

CANADA

BUILDINGS—BA

N. B., Saint John—HOUSING—BA 8/21—Central Mortgage & Housing Corp., 40 Charlotte St., 25 bldgs., 100-units housing project, Saint John, $896,070. Plans deposit $100. CD 6/6.

Ont., Lake Simcoe—BA 8/22—Dpt. Pub. Wks., Hunter Bldg., Ottawa, dredging, Lake Simcoe, $50,000.

Ont., Toronto—PLANT—BA 8/28—Acme Carbon & Ribbon Co. Ltd., 2356 Gerrard St. E., 1 story 62,000 sq. ft. steel frame, brick plant and office, Bertrand Ave. and Thermos Rd., Scarborough, $350,000. John B. Parkin Assocs., 1500 Don Mills Rd., Postal Station "J". Don Mills, archts.

Ont., Toronto—PLANT, OFFICE—BA 8/28—Barber-Greene Canada Ltd., Don Mills, Toronto, plant and office addn., $750,000. John B. Parkin Assocs., 1500 Don Mills Rd., Toronto, archts. CD 6/20.

Que., Montreal—HYDRAULIC LABORATORY—Bid Asked—Neyrpic, Canada Ltd., 455 Craig St. W., 1 story 75x100 ft. rein.-conc. hydraulic laboratory, $100,000. Andre Blouin, 515 Cote St. Antoine Rd., archt. Leblanc & Montpetit, 515 Demontigny St. E., mech. engrs. Brouillet & Carmel, 3600 Barclay Ave., Struc. engrs.

HEAVY CONSTRUCTION—LB & CA

BRITISH COLUMBIA—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.
Premier Constr. Co. Ltd., 1446 Alberni St., Vancouver, B. C. CA, **$599,695**. Proj. 19-56, grading, provision of culverts, base course, prime coat Mile 23 to Mile 37, Banff-Wintermere Hy. in Kootenay National Park, Radium Hot Springs. Awarded July 27. CD 7/17, under LB.

ONTARIO—Dpt. of Hys., Parliament Bldgs., Toronto.
Peel Constr. Co. Ltd., Brampton, P.O., Brampton, Ont. CA, **$781,285** (6 bidders) 56-90, [illegible] culverts, gran. base, hot mix paving 10.7 mi. Hy. [illegible], Ottawa District. Bids Aug. 1, awarded Aug. 3. CD 7/26.

▲ **ONTARIO**—Dpt. of Hys., Parliament Bldgs., Toronto, Ont.—**R. A. Blyth**, 7 St. Andrews Gardens, Toronto, Ont., LB **$434,943** structure and grading 0.9 mi. Hy. 11, Smooth Rock Falls, Cochrane Dist.; LB **$370,798** (4 bidders) structure Bridge No. 5, Hy. 401, Salmon River crossing Tyendinaga Twp., Kingston;

Ont.—**Johnson Bros. Co. Ltd.**, Box 1006, Brantford, Ont., LB **$349,185** (5 bidders) Contract 56-89, structure, grading, gan. base, hot mix paving, Cainsville overhead bridge, Hy. 2, Hamilton District.

R. A. Blyth Constr. Co., 7 St. Andrews Gardens, Toronto, Ont., LB **$163,425**, earthfill dam with rein.-con. spillway Morrison Dam, Exeter, ONTARIO Ausable River Conservation Auth., Exeter, Ont. Bids July 31. CD 7/11.

Harvey Constr. Co. Ltd., Hickson St., Kingston, Ont., CA, **$183,445**. asph. pavements. BROCKVILLE, ONT. Town, Town Hall, Brockville, Ont. Awarded Aug. 1.

M. H. & B. Contractors, 133 Fairfield Ave. S., Hamilton, Ont., CA, **$79,281**. storm sewer and appurtenances on Lawrence Rd. HAMILTON, ONT. City, City Hall, Hamilton, Ont. Awarded July 31. CD 2/6.

San Consentino Ltd., 80 Hymus Rd., Toronto, Ont., CA, **$255,000**. 4,444 ft. 30-and 33-in. sanitary sewers and manholes, in residential development, Etobicoke Suburban area, TORONTO, ONT. Kipling Syndicate, c/o Gurr & Setchell Ltd., engr., 3876A Bloor St. W. Toronto, Ont. Awarded July 31.

W. A. Moffatt Co., 436 Wellesely St. E. Toronto, Ont., LB **$140,140**. application of roofs on nine buildings, R. C. A. F. Station, Downsview, TORONTO, ONT. Defence Constr. (1951) Ltd. 56 Lyon St., Ottawa, Ont.

▲ **Dominion Bridge Co., Ltd.**, Lachine, Montreal, Que., CA, **$2,589,477**. sector gates at Cote St. Catherine Lock, Upper Beauharnois Lock, Beauharnois, Que., and the Iroquois Lock, Cornwall, Ont. QUEBEC and ONTARIO St. Lawrence Seaway Auth., No. 2 Temporary Bldg. Ottawa, Ont. Bids July 24. CD 8/6, under LB.

▲ **Perini Quebec Inc.**, McNamara Quebec Ltd. and Quemont Constr. Ltd., 1510 Drummond St., Montreal, Que., CA, Total est. **$135,000,000**. power development, at Chate-des Passes Upper Peribonka River, QUEBEC Aluminum Co. of Canada Ltd., Sun Life Bldg., Montreal, Que. CD 2/29.

▲ **Maritimes Steel & Foundries Ltd.**, New Glasgow, N. S. CA **$2,289,460**. (5 bidders) wire rope fenders supply and erection at locks of Seaway, Montreal, QUEBEC St. Lawrence Seaway Auth. No. 2 Temporary Bldg., Ottawa, Ont. Awarded July 27. CD 7/30, under LB.

▲ **Campbell Bros. & Thompson Ltd.**, 702 Grosvenor Ave. and **Kennedy Constr. Co. Ltd.**, 407 McGill St., both Montreal, Que. CA **$1,750,000**. clearing, grading roadbed for branch line to connect with outdoor power plant on St. Maurice River near LaTuque, QUEBEC, Shawinigan Water & Power Co., 600 Dorchester St. W., Montreal, Que. Shawinigan Eng. Co. Ltd., 600 Dorchester St. W., Montreal, engr.-archt. Awarded July 26. CD 3/13, under CA.

▲ **S. D. Miller & Sons Ltd.**, 6999 Cote des Neiges Rd., Montreal, Que. CA, **$1,836,424**. collector sewer and outfall for municipalities of Montreal South Jacques Cartier and Preville, Montreal, QUEBEC. St. Lawrence Seaway Auth. No. 2 Temporary Bldg., Ottawa, Ont. Bids July 24, awarded July 27. CD 7/31, under LB.

Marine Industries Ltd., 1405 Peel St., Montreal, Que. LB **$854,000**. dredging St. Charles River Estuary, QUEBEC CITY, QUE. National Harbor Bd., Parliament Bldgs., Ottawa, Ont. CD 8/1/55.

Maurice Moiriat, Inc., 8490 Clark St., Montreal, Que., CA, **$49,683**. watermains, chambers and waterworks imprvs., SHAWINIGAN SOUTH, QUE. Municipality of Shawinigan South, Town Hall, Shawinigan South, Que. J. A. Beauchemin & Assoc., 1610 Sherbrooke St. W., Montreal, engrs. Awarded Aug. 1. CD 2/20/51.

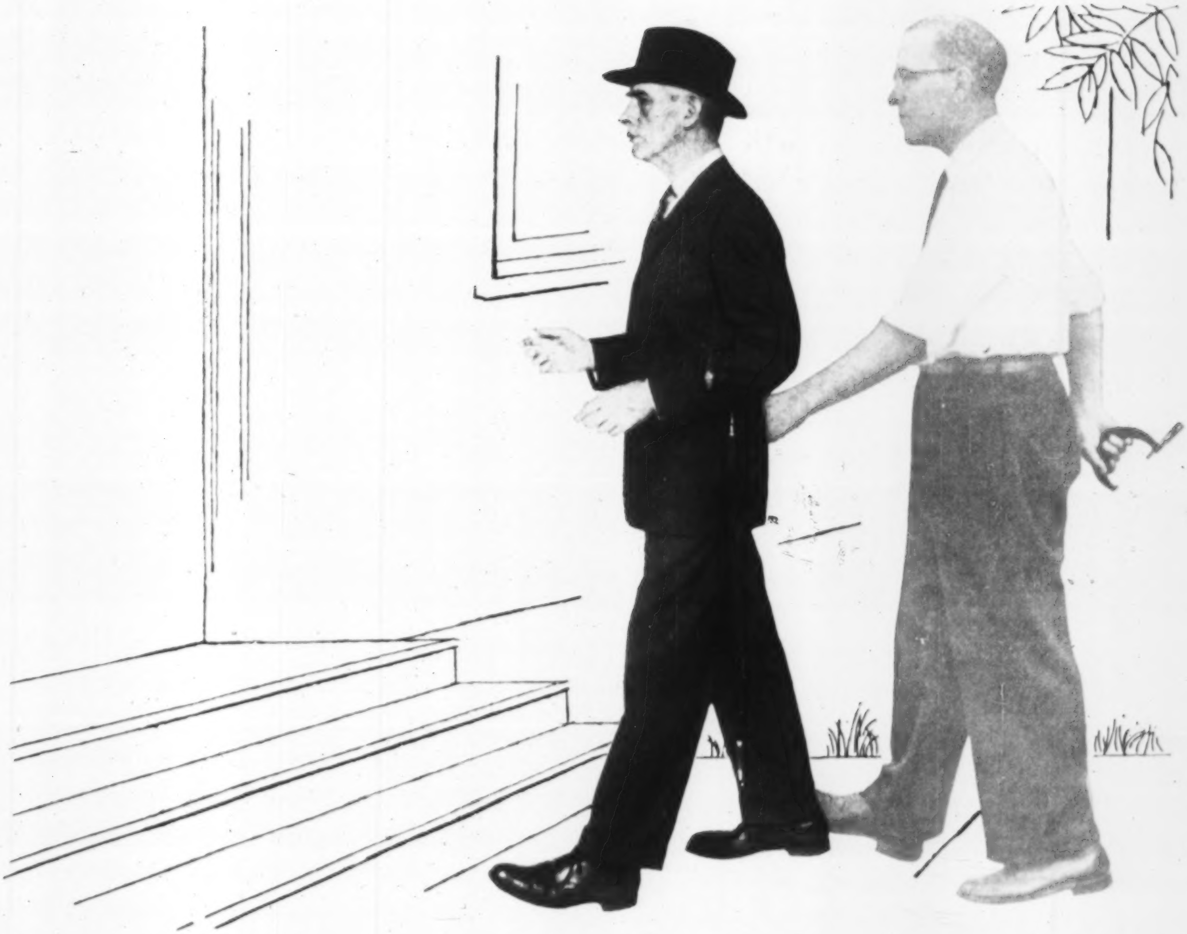
Stephens Constr. Ltd., 199 Townsend Ave., Sydney, N. S. CA, **$500,000**. 3 story, brick on steel frame, PROVINCIAL Bldg., Prince St., SYDNEY, N. S. Dpt. of Hys. & P. Wks., Province Bldg., Halifax, N. S. Bids July 30, awarded Aug. 1. CD 7/17.

Foundation Co. of Canada Ltd., 603 Clarke Sideroad, London, Ont. CA, **$618,706**. Naval DIVISION Bldg., H.M.C.S. Provost, Becher St. and Thames River, LONDON, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. Bids June 28. CD 6/15.

▲ **Bowman Corp. Ltd.**, 10857 Pie Ix Blvd., Montreal, Que. CA, Est. Over **$1,000,000**. 101-units HOUSING "Hill Top Garden" Levesque Blvd., St. Vincent de Paul, MONTREAL, QUE. Gabriel Jarry, 12385 Jeanne Mance St. Montreal, archt. Awarded July 26.

Cecil Carpenter & Co. Ltd., 5139 Decarie Blvd., Montreal, Que., CA **$325,000**. (6 bidders) 1 story 121½x187½ rein.-conc., steel frame, FACTORY with 2 story office section, MONTREAL, QUE. Hoffman-Laroche Ltd., 286 St. Paul St. W., Montreal, Que. Bids June 22, awarded July 28. CD 6/20.

Gratiem Arsneault, 714 Blvd. St. Maurice, Shawinigan Falls, Que. LB **$679,740**. (3 bidders) Jacques Buteux SCHOOL, LaSalle & S. Jacques Sts., SHAWINIGAN FALLS, QUE. La Commission Scolaire de Shawiniga Falls, Shawinigan Falls, Que. Arthur Lacoursier, 279 4 Ave., Shawinigan Falls, archt. CD 12/30.



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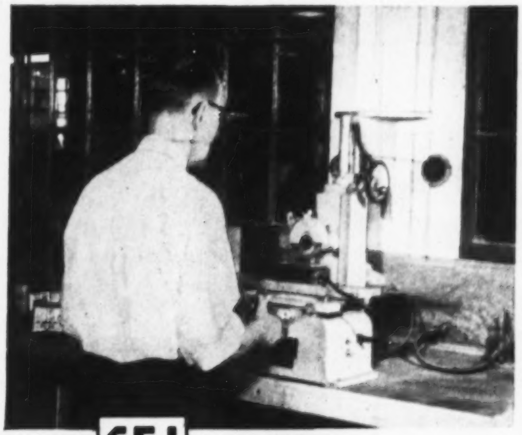

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

▲† **Vermont**—BA 10/9—U. S. Eng., 111 E. 16 St., New York 3, N. Y., modification of Wrightsville Dam, Winooski River, Wrightsville, CIVENG 30-075-57-7 $1,000,000. Extended date. CD 8/2.

BUILDINGS—BA

Mass., **Lynnfield**—SCHOOL—BA 8/31—Town, C. W. Kessler, Chn. School Comn., School Dpt., Lynnfield, junior high school addn., Main St., $600,000. Plans deposit $50 refundable. Extended date. Rich & Tucker Assoc., 45 Newbury St., Boston, archts. CD 8/7.

HEAVY CONSTRUCTION—LB & CA

MAINE State Hy. Comn., State House, Augusta,

Thomas **DiCenzo,** Calais, Me. CA **$246,787**. bit. con. road 3.05 mi., F. A. Secondary Proj. S 0306 (2), State Hy. "189", Lubec. Bids Aug. 1.

MAINE State Hy. Comn., State House, Augusta,

Me. **A. P. Wyman, Inc.,** Waterville, Me. LB **$109,670**. surf. tr. grav. road and bridge 0.718 mi., F. A. Secondary Proj. D-RD-7 (1), Prince's Point Rd., Brunswick. Bids Aug. 1.

VERMONT State Dpt. Hys., State Office Bldg., Montpelier,

Vt. **Blow-Cote Constr. Co. Inc.,** Upper Main St., Morrisville, Vt., LB **$112,918**. grading, drainage, tack coat, cutback, asph. crushed stone surf. Rte. 3, S-92 (2) Alburg; LB **$78,772**. grading, drainage, base, double tack coat refined tar Rte. 58, S 01 (1) Lowell;

Vt. **Vermont Paving Co. Inc.,** P. O. Box 22, Burlington, Vt., LB **$78,862,** resurf. road, Georgia-Milton Town Line, MA 4/25, 6/56. Milton, Shelburne and Charlotte. Bids Aug. 3. CD 7/25.

W. R. Howrigan, Jr., 8 Farrar St., Swanton, Vt., LB **$75,478,** est. $90,000. water intake addn., at Lake Champlain, BURLINGTON, VT. City, Bd. Water Comrs., City Hall, Burlington, Vt. Bids Aug. 2. CD 7/16.

BUILDINGS—LB & CA

Wright & Morrissey Inc., 263 S. Champlain St., Burlington, Vt., LB **$776,700**. DORMITORY, BURLINGTON, VT. Trinity College, Colchester Ave., Burlington, Vt. Bids Aug. 1. CD 7/25.

Clark & Smith, Inc., 1372 Hancock St., Quincy, Mass. LB **$153,300**. est. $160,000. FACTORY Offices addn., 170 Pearl St., BRAINTREE, MASS. Sigman Instruments, Inc., 170 Pearl St., Braintree, Mass. Edgar H. Wood & Assoc., 1850 Hancock St., Quincy, Mass., designers.

C. C. Temple Constr. Co., Inc., 729 Boylston St., Boston, Mass. CA **$459,883**. est. $500,000. DORMITORY, NORTON, MASS. Wheaton College, Norton, Mass. Bids Aug. 2. CD 7/26.

Breamar Homes, Inc., Beaver Dam Rd., Scituate, Mass. CA Approx. **$345,000**. RESIDENTIAL DEVELOPMENT "Beaver Dam Heights" incl. 23 houses, Beaver Dam, SCITUATE, MASS. Owner, c/o contractor.

Adams & Ruxton Constr. Co., 1387 Main St., Springfield, Mass. CA Approx. **$100,000**. PLANT, SPRINGFIELD, MASS. Chain Link Belt Co., Roller Chain Div., 369 Plainfield St., Springfield, Mass. McClintock & Craig, Inc., 458 Bridge St., Springfield, archt.

City, School Comn., Park Ave., Cranston, R. I., rejected bids June 13, Woodridge SCHOOL ADDN., alterations, Budlong Rd., CRANSTON, R. I. New Bids Aug. 7. CD 6/19, under LB.

▲ **Post Realty Corp.,** c/o Philip Birnbaum, archt., 12 E. 48 St., New York 17, N. Y., Owner Builds. **$1,000,000**. 150-family APARTMENT, 2-acre tract on 39 Glenbrook St., STAMFORD, CONN. CD 7/26.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ N. Y., **New York**—BA 9/19—Dpt. P. Wks., Municipal Bldg., Zone 7, Manhattan Plaza imprvs., Brooklyn Bridge, reconstr. of bridge approach, alterations to subway structures in connection with the wid'n. of Centre St. and Park Row and constr. of pedestrian underpasses, ramps, street approaches, paving and landscaping. Plans deposit $100.

BUILDINGS—BA

▲ N. Y., **New York**—SCHOOL—BA 8/24—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr. J.H.S. 117, West side of Second Ave. between E. 108 and 109 Sts., $2,500,000. Plans deposit $30. Extended date. CD 7/21.

HEAVY CONSTRUCTION—LB & CA

▲ **Tibbetts Contr. Co.,** Hawton St., Yonkers, N. Y., CA, **$672,650** imprv. sewerage sys., intercepting sewers, ELIZABETH, N. J. City, City Hall, Elizabeth, N. J. Bids May 3. CD 5/18, under LB.

LaFera Constr. Co. Inc., 149 Verona Ave., Newark, N. J., CA, **$686,975,** Contr. 5B; (Elizabeth, N. J.)

▲ **LaFera Constr. Co. Inc.,** 149 Verona Ave., Newark, N. J., CA **$2,281,719** design and construct third section of sewerage sys., Hillcrest-Totowa Section, PATERSON, N. J. City, City Hall, Paterson, N. J. Bids May 8, awarded July 31. CD 5/11, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**Allegheny Contg. Industries, Inc.,** 801 Bingham St., Pittsburgh, Pa. LB **$987,226**. (3 bidders) 35,174 ft. crushed aggregate base with bit. surf. 22 ft. wide Benesette Twp., L.R. 24035 (1), Elk Co.,

Pa.—**Western Pa. Asphalt Paving Co.,** 245 Race St., Box 499D, Meadville, Pa. LB **$563,153**. (4 bidders) 28,641 ft. crushed aggregate base with bit. surf. 3 prestressed precast rein.-con. bridges Cranberry Twp., Oil City, L.R. 60078 (1R), 60024 (1R), Venango Co.;

Pa.—**Union Paving Co.,** 1 E. Wynnewood Rd., Wynnewood, Pa. LB **$76,321**. (3 bidders) 1,189 ft. c. conc. with bit. surf. Chester, L.R. 23095 (3), Delaware Co.;

Pa.—**Kim Co.,** Box 127, Harrisburg, Pa. LB **$438,127**. (2 bidders) 3,670 ft. c. conc. with bit. surf. for State Street Bridge 26 ft. each side concrete devisor Harrisburg, T.R. 22, Dauphin Co. Bids. Aug. 3. CD 7/16.

† **William M. Chappell,** 1346 Good Hope Rd. S. E., Wash., D. C. CA **$599,700**. (3 bidders) heating plant addn. and water supply for deluge sprinkler sys., Eng. 49-080-56-28-(29), Eng. 49-070-56-32-(33), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas St. N.W., Wash., D. C. Bids July 24, awarded Aug. 3. CD 7/30, under LB.

BUILDINGS—LB & CA

▲ **Park Avenue Homes,** c/o Edwin Voorhis & Sons, archts., 288 Sunrise Hy., Rockville Center, N. Y. Owner Builds. Est. **$3,000,000**. 100 HOUSES on tract at Park Ave. and Dix Hills Rd., HUNTINGTON, N. Y.

▲ **Joseph Bisceglia & Sons,** 13 Oakland Ave., Harrison, N. Y. CA **$1,521,000**. general constr., New Malverne high SCHOOL on Pines Pond, Pamblers Field area east side of Ocean Ave., Attermations of Wick Lane and Aberdeen St., MALVERNE, N. Y. Bd. Educ., Union Free School Dist. No. 12, Town of Hempstead, Malverne High School, Ocean Ave., Malverne, N. Y. CD 5/15, under LB.

▲ **Rolling Greens Homes,** c/o Alwin Cassens Jr., archt., 145 S. Franklin Rd., Valley Stream, N. Y. Owner Builds. Est. **$5,000,000**. 150 HOUSES on 61 acre tract at Willelts Rd. east of Shelter Rock Rd., MANHASSET, N. Y.

▲ **Westwind Estates,** c/o Alwin Cassens Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. Est. **$1,800,000**. 117 HOUSES on tract north of Sunrise Hy. and west of Locust Ave., OAKDALE, N. Y.

Consolidated Constructors, Inc., 21 E. 40 St., New York, N. Y. CA **$700,000**. elementary SCHOOL and altering existing bldg., PERU, N. Y. Peru Central School System, Peru, N. Y. CD 5/18, under LB.

▲ **Fawn Ridge in Westchester Homes,** c/o Lane Realty, 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. Est. **$1,200,000**. 55 HOUSES on tract on Grassy Sprain Rd. south of Jackson Ave., YONKERS, N. Y.

▲ **Bd. of Education,** Borough of Paramus, Borough Hall, Paramus, N. J., rejected bids Aug. 1, high SCHOOL, PARAMUS, N. J. Est. **$2,200,000**. CD 7/17.

Lawrence Constr. Co., 2015 Morris Ave., Union, N. J., Owner Builds. Est. over **$550,000**. 72,000 sq. ft. WAREHOUSE, Jefferson Ave. off Rt. 22, UNION, N. J. Hoffman Beverage Co., Chicago, Ill., Lessee. Geo. Siegler, 901 Broad St., Newark, archt.

Hall Constr. Co., Little Silver, N. J., CA, **$500,000**. 2 story, brick, block SCHOOL, POINT PLEASANT, N. J. Diocese of Trenton, Trenton Trust Bldg., Trenton, N. J. Thomas Henry Moran, Princeton, archt.

▲ **Joseph Muscarelle Inc.,** Route 17 and Essex St., Maywood, N. J., CA, **$1,722,064**. Tenafly HIGH SCHOOL, TENAFLY, N. J. Bd. of Educ., Tenafly High School, W. Clinton Ave., Tenafly, N. J. Bids May 29. CD 6/7, under LB.

Joberco Corp., 7820 Whitewood Rd., Elkins Park, Pa. Separate Contracts. Est. **$950,000**. RESIDENTIAL DEVELOPMENT, incl. 42 units, Township Line Rd., ELKINS PARK, PA.

Hyman Backman, Inc., 507 Howe Rd., Merion, Pa. CA **$350,000**. RESIDENTIAL DEVELOPMENT, incl. 26 units, Sixth St., FOLSOM, PA. Owner, c/o contractor.

John P. Donovan, 225 S. 15 St., Phila., Pa. CA **$350,000**. 1 and 2 story, brick, concrete block, steel CHURCH and school, SPRINGFIELD, PA. St. Kevins R. C. Church, 225 N. 18 St., Phila., Pa. CD 4/12.

U. S. Eng., First and Douglas Sts. N.W., Wash., D. C., cancelled bids to have been opened Aug. 21, 70 housing units, (Capehart), Eng. 49-080-57-1 (1), FORT RITCHIE, MD. CD 8/8.

U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. cancelled bids to have been opened Aug. 22, construct and finance 12 housing units, Army Receiving Station, (Capehart), Eng. 49-080-57-2-(2), LA PLATA, MD. CD 8/7.

Cladney Constr. Co., 635 F St. N.W., Wash., D. C. LB **$227,461**. WAREHOUSE, LAUREL, MD. Mobern Electrical Supply Co., 744 Ninth St. N.W., Wash., D. C. Bids July 25. CD 7/13.

SOUTH

HEAVY CONSTRUCTION—BA

† **Tennessee**—BA 8/30—U. S. Eng., P. O. Box 97, Memphis, 1, Tenn., placement of approx. 30,000 tons of 1-in. average thickness riprap upper bank paving on previously graded banks of Mississippi River at Island 40, (Mile 742 AHP), Serial No. CIVENG-40-041-57-18.

North Carolina—TELEPHONE LINES—BA 9/5—Randolph Telephone Co., Liberty, 92.89 mi. telephone lines, Randolph, Alamance, Guilford and Chatham Counties, REA Proj. 522A. Plans deposit $10. L. E. Wooten & Co., 306 S. Dawson St., Raleigh, engrs. CD 11/30/55.

† **Florida**—BA About 9/11—U. S. Eng., P. O. Box 4970, Jacksonville, widening and deepening Hillsboro Bay Channel, Tampa Harbor, CIVENG-08-123-57-12. CD 11/24/43.

BUILDINGS—BA

Virginia—ADMINISTRATION, etc.—BA 8/22—Commonwealth of Va., Dpt. of Hys., Central Hy. Office Bldg., 1221 E. Broad St., Richmond, administration bldg. and toll facilities, City of Hampton, Contract B-4, (Hampton Roads Proj.) Plans deposit $25. CD 6/3/53, under Unclassified.

Ga., **Monroe**—BA 8/30—State School Bldg. Auth., 244 Washington St. S.W., Atlanta, drilled well for Good Hope Elementary School for Colored; Stambaugh & Jett; 306 Rhodes Bldg., Atlanta, archts., well and pump house for Youth-Walnut Grove Elementary School. Bothwell & Nash, 208 Roswell St., Marietta, archts.; drilled well and well house for Good Hope Elementary School. Abreu & Robeson, 141 Walton St., N.W., archts. Plans deposit $50.

HEAVY CONSTRUCTION—LB & CA

▲ **Lee Constr. Co.,** 311 W. Worthington Ave., Charlotte, N. C. LB **$3,354,378**. Contr. 11, sewage treatment plant, WINSTON-SALEM, N. C. City, City Hall, Winston-Salem, N. C. Bids July 26. CD 6/22.

Peele Electric, Burlington, N. C. LB **$119,100**. Contr. 12, electric work (Winston-Salem, N. C.)

Rowe-Goodin-Jones, Inc., 2762 Guess Rd., Durham, N. C. LB **$99,500**. Contr. 13, plumbing work. (Winston-Salem, N. C.)

▲ **Zack Co.,** 201 Crapo St., Flint, Mich., LB **$2,767,365**. four 315 ft. high steel towers incl. guy and tie cables, fittings, service platforms, railings, ladders, radar platform, main hoist, foundation, guy anchors, lighting sys., power sys. for man hoist, conduit sys., shop and field painting, furnishing, installing 8 hoists with necessary cables, sheaves, electrical controls and other auxiliaries, at Air Force Plant No. 6, for the Dpt. of the Air Force, DAWSONVILLE, GA. Lockheed Aircraft Corp., George Div., Marietta, Ga. Bids Aug. 1. CD 7/27.

† **MISSISSIPPI**—Bureau P. Rds., Dpt. Commerce, First National Bank Bldg., Florence, Ala.,

Lacoste, Inc., 1527 22 Ave., Gulfport, Miss. CA **$668,-**

Cannon Court, Huntington, N. Y. Owner Builds. Est. **$390,000**. 30 HOUSES on tract at Moriches Rd. south of Rte. 25A, ST. JAMES, N. Y.

BUILDINGS—LB & CA

Fuller & Peacock, 202 13 St., Augusta, Ga., LB **$593,000** (3 bidders) three SCHOOLS McIntosh Co., DARIEN, GA. State School Bldg. Auth., 244 Washington St. S.W., Atlanta, Ga.

Century Homes, 2325 S.W. 79 Court, Miami, Fla., CA, **$500,000**. 56 RESIDENCES, Martinique Dr. and Marlin Rd., MIAMI, FLA. Morris Fox, 2325 S.W. 79 Court, Miami, Fla. Gerard Pitt, 1217 Security Bldg., Miami, archt.

▲ **Robert L. Turchin, Inc.,** 1835 Purdy Ave., Miami Beach, Fla., LB Est. **$1,000,000**. MEDICAL ARTS bldg., Meridian Ave., MIAMI BEACH, FLA. Miami Beach Physicians Group Inc., c/o Smith & Korach, archts., 1630 Lennox Ave., Miami Beach, Fla. Bids July 31. CD 7/19.

Hubert Owen Co., Jackson, Tenn., CA, **$688,611**. Negro High SCHOOL, JACKSON, TENN. City, Bd. of Educ., Jackson, Tenn. Awarded July 25. CD 5/5/54.

MIDDLE WEST

BUILDINGS—BA

▲ Mich., **Wyandotte**—SCHOOL—BA 8/27—City, C. C. Readhead, secy, School Dist. 540 Eureka St., Roosevelt High School, Eureka St., $1,000,000. Plans deposit $50 refundable. Bennett & Straight, 15621 Michigan Ave., Dearborn, archts. Benedict & Assoc., Inc., 18403 W. McNichols Rd., Detroit, engr. Bids 7/23 rejected. CD 7/9.

Mich., **Fenton**—SCHOOL—BA 8/28—Village, Bd. Educ., Robert W. Ganshaw, secy, 2 elementary schools, North Rd. and State Rd., $800,000. Plans deposit $40. Warren S. Holmes Co., 2200 Michigan National Bldg., Lansing, archt. CD 2/7.

Mich., **Garden City**—SCHOOL—BA 8/28—City, William Fisher, secy, Bd. Educ., 29128 Dover St., Lathers Street School addn. Plans deposit $20 refundable. W. T. Anicka & Assoc. 2309 Washtenaw St., Ann Arbor, archts. CD 2/28.

HEAVY CONSTRUCTION—LB & CA

▲ **Emil Marcelletti & Son Constr.,** Bedford, O. LB **$1,189,000.** est. $1,100,000 (4 bidders) Trebisky-Dorsch watermain Sect. No. 1, CLEVELAND, O. City, Dpt. Pub. Utilities, Emil J. Crown, dir., City Hall, Cleveland 14, O. Bids Aug. 3. CD 7/26.

▲ **Gast Constr. Co.,** Warsaw, Ind., LB **$1,553,095** (6 bidders) est. $1,578,969 rigid-type runway and taxiway at Municipal Airport, INDIANAPOLIS, IND. Bd. Aviation Comrs., Indianapolis Municipal Airport, Indianapolis, Ind. Bids Aug. 2. CD 7/18.

▲ **S. A. Healy Co. & Gargaro Co.,** 6561 E. Seven Mile Rd., Detroit, Mich. CA **$1,481,578.** West sanitary trunk sewers, Contrs. Sec. 3A, 3B, 3C, VAN DYKE, MICH. Warren Twp., 22720 Van Dyke Ave., Van Dyke, Mich. CD 6/21, under LB.

BUILDINGS—LB & CA

Max Null & Co., 7555 N. Illinois St., Indianapolis, Ind., CA Est. **$357,000.,** EDUCATIONAL bldg., incl. chapel, nursery, classrooms, activity rooms, kitchenette, living quarters, INDIANAPOLIS, IND., Meridian Heights Presbyterian Church, Dr. T. F. Riddell, 4701 Central, Indianapolis, Ind. McGuire & Shook, Fletcher Trust Bldg., Indianapolis, archts., CD 8/27/45.

C. G. Schmidt Inc., 4199 N. Richards St., Milwaukee, Wis., CA, **$611,170** general contract, high SCHOOL addns., alterations, WHITEFISH BAY, WIS. School Dist. No. 1, 120 E. Fairmount Ave., Milwaukee, Wis. Bids July 27, awarded July 31. CD 8/3, under LB.

▲ **Regents of University of Michigan,** W. K. Pierpont, Plant Service Bldg., Ann Arbor, Mich., rejected bids July 17, Fluids ENGINEERING bldg., Proj. No. 78, ANN ARBOR, MICH. CD 6/21.

Seth E. Giem & Assoc., Kalamazoo, Mich. LB **$757,400.** general constr., junior high SCHOOL, PORTAGE, MICH. Portage Twp. School Dist., Portage, Mich. Bids July 31. CD 7/18.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

Minnesota—SUBSTATION—BA 8/27—Rural Cooperative Power Assn., Elk River, (1), Pine City 60 KV substation, one bay extens., etc., (2), Cambridge 69 KV substation, one bay extens., etc., (3) Long Siding Distribution substation, Hennepin Co. $73,000. Plans deposit $10. CD 3/24/54.

† **Texas**—BA About 9/7—U. S. Eng., Box 1229, Galveston, Tex., east access road, McGee Bend Road, McGee Bend Dam, Angelina River, CIVENG-41-443-57-4. CD 6/9/44.

BUILDINGS—BA

† **Tex., Orange**—BARRACKS, etc.—BA 9/6—Officer in Charge of Constr., Eighth Naval Dist., Bldg. 16 U. S. Naval Station, New Orleans, (Algiers), La. E. M. Barracks and E. M. Subsistence bldgs. U. S. Naval Station, NBy-1116, Spec. 1116/56.

† **Wyoming**—POWER PLANT, etc.—BA 9/25—Bureau Reclamation, Dpt. Interior, Glendo, completion of Glendo Power Plant and Switchyard, Missouri River Basin Proj. near Glendo, Spec. DC 4697. adv. ENR 8/16. CD 5/25/44.

HEAVY CONSTRUCTION—SLC

New Mexico—TRANSMISSION LINES—Northern Rio Arriba Electric Co-operative, Chalma, soon lets contract, 25.78 mi. 69 kv transmission lines, erection 2,500 kva substation, Rio Arriba Co. $100,000. Cecil Hawk & Assoc., 1629 Broadway, Lubbock, Tex., engrs.

HEAVY CONSTRUCTION—LB & CA

J. J. Igoe & Son, Bismarck, N. D. LB **$81,578.** curb gutter, pavement, RAY, N. D. City, Ray, N. D. L. W. Burdick, c/o W. W. Webster, Box 1134, Williston, engr. Bids July 25.

Brose & Smith, Larned, Kan. CA **$115,000.** street imprvs., surfacing, blacktopping, streets in new housing addn., LARNED, KAN. City, Larned, Kan.

T. K. Irwin and Ralph B. Leonard, Mercantile Commerce Bldg., Dallas, Tex., Owner Builds **$51,000.** site area earthwork, grading, near Duncanville, DALLAS, TEX.

T. K. Irwin and Ralph B. Leonard, Mercantile Commerce Bldg., Dallas, Tex., Owner Builds **$82,500.** hard-paved streets, near Duncanville, DALLAS, TEX.

T. K. Irwin and Ralph B. Leonard, c/o Mercantile Commerce Bldg., Dallas, Tex., Owner Builds **$80,000.** sanitary sewers, **$77,000,** storm sewers, near Duncanville, DALLAS, TEX. CD 7/25.

T. K. Irwin & Ralph B. Leonard & Assocs., Mercantile Commerce Bldg., Dallas, Tex., Owner Builds **$50,000.** water system, near Duncanville, DALLAS, TEX.

Whittle Contg. Co., 4007 Irving Blvd., Dallas, Tex. LB **$266,042.** raw water connection from Lake Worth to South Holly water plant, Contract No. 7, FORT WORTH, TEX. City, City Hall, Fort Worth, Tex. Bids Aug. 2. CD 7/17.

BUILDINGS—LB & CA

Lakehead Constructors, 201 Telegram Bldg., Superior, Wis. LB **$323,770.** (3 bidders) Garfield Ave. gas PLANT ADDN., imprvs., 600 Garfield Ave., DULUTH, MINN. City, R. E. Gottschald, city purch. agt., City Hall, Duluth, Minn. Consolidated Gas & Service Co., 327 LaSalle St., Chicago, Ill., engr. DeLeuw, Cather & Co., 150 N. Wacker Dr., Chicago, Ill., engrs. Bids July 26.

Lenci, Lenci & Englund, Virginia, Minn. LB **$434,473.** (6 bidders) general constr., HOSPITAL, ELY, MINN. Ely-Bloomenson Community Hospital, A. O. Knutson, clk., Ely, Minn. Bids Aug. 2. CD 7/19.

Winger Constr. Co., Ottumwa, Iowa. CA **$168,100.** (2 bidders) heating and POWER PLANT IMPRVS. Iowa State Reformatory, ANAMOSA, IOWA. State Bd. of Control, Capitol Bldg., Des Moines, Iowa. Bids July 10. CD 4/21/53.

C. A. Doolittle Jr. Constr. Co., 331 N. Waco St., Wichita, Kan. LB **$484,000.** general constr., children's COTTAGES at Parsons State Training School, PARSONS, KAN. State, Dpt. Admin., State House, Topeka, Kan. Ask & Harrison, 307½ Laura St., Wichita, Kan., consult. archt. Dwight Brown, State House, Topeka, state archt. Bids July 24.

Big Spring Independent School Dist., Big Spring, Tex., cancelled bids to have been opened July 24. Elementary SCHOOL No. 1, est. **$475,000;** Elementary School No. 2, est. **$425,000.** BIG SPRING, TEX. CD 7/17.

Jansen Constr. Co., Box 5692, Dallas, Tex. LB **$767,000.** Base bid, MUNICIPAL bldg. alterations, DALLAS, TEX. City, City Hall, Main & Harwood Sts., Dallas, Tex. Bids July 24. CD 9/22/55.

Geo. P. & Houston Hill, Ft. Worth National Bank Bldg., Fort Worth, Tex., rejected bids, BOWLING ALLEY, FORT WORTH, TEX. LB **$357,000.** CD 7/23, under LB.

Farnsworth & Chambers Co., Inc., 3018 Leeland St., Houston, Tex. CA, **$774,033.** MUSEUM WINGS, HOUSTON, TEX. Museum of Fine Arts, 5700 S. Main St., Houston, Tex. Bids May 23. CD 5/14.

Bert Coats, Builder, 7026 Stella Link Rd., Houston, Tex. CA, **$388,885,** 21 DWELLINGS; CA **$376,500,** 20 DWELLINGS, HOUSTON, TEX. Bert R. Coats, Builder, 7026 Stella Link Rd. and Temple Lumber Co., 4807 Kirby Dr., Houston, Tex. CD 7/6.

Albert Meyerson Co., Box 14055, Houston, Tex. LB **$788,000,** est. $600,000 HOSPITAL alterations and expansion, (M. D. Anderson Center) HOUSTON, TEX. University of Texas, Bd. Regents, Austin, Tex. Bids July 31. CD 7/11.

Howard Terry, Contractor, Lake Jackson, Tex., Own Forces. **$391,000,** 37 DWELLINGS; **$378,600,** 34 DWELLINGS, LAKE JACKSON, TEX. CD 7/31.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **Calif., Los Angeles**—BA 8/29—City, City Hall, Section A and B, Unit II, North Central outfall sewer, Hyperion Treatment Plant, $1,500,000. Hyperion Engineers, 828 S. Figueroa St., Los Angeles, engrs. CD 5/31/55.

† **Idaho**—SWITCHGEAR ASSEMBLY—BA 9/11—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Sch., Item 1, motor-control switchgear assembly for "C" Line Canal Pumping-plant extension, Boise Proj., Spec. DS-4743. L. N. McClellan, ch. engr.

† **Washington**—CONTROL EQUIPMENT ASSEMBLY—BA 9/11—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Sch. 1, Item 1, one control equipment assembly; Sch. 2, Item 2, one station-service control center assembly for Frenchman Springs Pumping Plant, Columbia Basin Proj., Spec. DS-4742. L. N. McClellan, ch. engr.

HEAVY CONSTRUCTION—LB & CA

† **M. J. Boesigner,** Mountain Home, Idaho, LB **$329,987** est. $313,831 (3 bidders) indoor swimming pool Mountain Home Air Force Base, ENG-45-164-56-48, MOUNTAIN HOME, IDAHO. U. S. Eng. City-County Airport, Walla Walla, Wash. Bids July 31. CD 6/28.

UTAH—State Rd. Comn., Salt Lake City.
Thorn Constr. Co., Inc., Springville, Utah, LB **$366,896.** est. $361,143 plantmix bit. surf. 5.508 mi. between Midvale Junction and Draper Cross Roads, State Proj. 1568 Salt Lake Co. Bids July 26. CD 7/19.

UTAH—State Rd. Comn., State Capitol, Salt Lake City.
Le Grand Johnson Constr. Co., Logan, Utah, LB **$702,745,** plant mix bit. surf. 6.353 mi. 1 conc. bridge, F-017-1 (1), Logan, Cache Co. Bids July 31.

Waterfall Constr. Co., 1645 Wall Ave., Ogden, Utah, LB **$267,000.** sanitary sewers, NORTH OGDEN, UTAH. North Ogden City Council, 1648 E. 2600 North, North Ogden, Utah. Bids July 10. CD 5/17.

Waterfall Constr. Co., 1645 Wall Ave., Ogden, Utah, CA, **$184,751.** city-wide sidewalks, curbs, gutters, street paving Paving Dist. 176, OGDEN, UTAH. Ogden City Corp., City-County Bldg., Ogden, Utah. Bids July 26. CD 2/14/44.

† **Thayn Constr. Co.,** 2021 E. 27 St., South, Salt Lake City, Utah. CA **$412,000.** completion of rehabilitation of 50 m.g. reservoir Naval Ammunition Depot, NBY 4698, Spec. 4698/56, HAWTHORNE, NEV. Dist. P. Wks. Office, 12th Naval Dist., San Bruno, Calif. Bids June 26. CD 6/14.

WASHINGTON—State Hy. Comn., Olympia,
Wash.—**H. M. Skov Constr. Co.,** 1008 S. 9 Ave., Yakima, Wash., CA, **$171,710.** (4 bidders) surf., b. conc. paving, rein.-con. box girder bridge 0.256 mi. FAS S 0404 (2), Yakima Co.;
Wash.—**Associated Sand & Gravel Co.,** 2508 Colby St., Everett, Wash., CA, **$186,033** (3 bidders) bit. surf. tr., surf. b. conc. paving 4.145 mi. Primary State Hy. 1, Everett, Snohomish Co.;
Wash.—**Northwest Constr. Co.,** 39050 6 Ave. N. W., Seattle, Wash., CA, **$171,003** (1 bidder) clearing, draining, grading, surf. c. conc. paving 2 mi. S. 312 St., FAS S-1193 (1), King Co.;
Wash.—**T. Scalzo Co.,** 3211 Airport Way, Seattle, Wash., CA, **$154,895** (11 bidders) clearing, draining, grading, surf. 2.236 mi. Primary State Hy. 9 FAP F 007-5 (6), Thurston Co. Bids July 31, awarded Aug. 1. Grand total $683,641. CD 7/16.

WASHINGTON—State Hy. Comn., Olympia,
Wash.—**Carbon Brothers,** N. 3430 Cook St., Spokane, Wash., LB **$139,796** (1 bidder) draining, grading, surf. b. conc. paving and stockpiling crushed stone surf., ballast and mineral aggregates on 0.522 mi. Primary State Hy. 3, Clarkston, FAP F-042-1 (2), Asotin Co.;
Wash.—**J. N. Conley,** 8919 S. E. Foster Rd., Portland, Ore., LB **$583,004** (4 bidders) clearing, draining, grading, surf. 5.528 mi. Sec. State Hy. 13-A, Pacific Co.;
Wash.—**Fiorito Brothers,** 1100 Leary Way, Seattle, Wash., LB **$307,971.** (4 bidders) clearing, draining, grading, bit. surf. b. conc. paving and rein.-con. flat slab bridge 3.069 mi. Primary State Hy. 2, FAP IN 002-1 (14) King Co.;
Wash.—rejected bids July 31, clearing, draining, grading, surf. 0.919 mi. Port Orchard-Waterman Rd., FAS S 0329 (1), Kitsap Co. bids July 31. CD 7/16.

† **Stewart & Nuss Inc.,** 410 Thorne Ave., Fresno, Calif., CA, **$602,170.** runway exten. and marker lights, Fresno Air Terminal, Inv. 56-37, FRESNO, CALIF. U. S. Property & FO, Purchg. & Contg. Sect. 1215 16 St., Sacramento, Calif. CD 7/11, under LB.

BUILDINGS—LB & CA

▲ **Beckner Constr. Co.,** 2650 River Ave., South San Gabriel, Calif., CA, **$1,034,500.** Junior High SCHOOL, Mona Blvd. and 124 St. COMPTON, CALIF. Compton Union High School Dist., 417 W. Olive St., Compton, Calif. Bids July 27, awarded Aug. 3. CD 8/3, under LB.

▲ **St. John Corp.,** 5121 W. Jefferson Blvd. Los Angeles, Calif., CA, **$1,584,648,** est. $1,520,000 Lennox High SCHOOL (first increment) HAWTHORNE, CALIF. Centinella Union High School Dist., 365 Hawthorne Way, Hawthorne, Calif. Bids June 26, awarded Aug. 2. CD 6/28, under LB.

▲ **Christianson Brothers Co.,** 100 E. Camino Real, San Carlos, Calif., Own forces, **$1,100,000.** 50-HOME Subdivision, SAN CARLOS, CALIF.

▲ **I. C. Curry,** 1701 "B" St., San Diego, Calif., CA, **$2,301,367,** Will C. Crawford High SCHOOL, SAN DIEGO, CALIF. San Diego Unified School Dist., 4100 Normal St., San Diego, Calif. Bids July 24, awarded Aug. 3. Clyde Hufbauer, 975 5 Ave., archt. CD 5/1/53.

▲ **Theo. G. Meyer & Sons,** Quint & Custer Sts., San Francisco, LB **$3,711,315.** 1 story, 90,000 sq. ft. EXHIBIT HALL at Civic Center Plaza, SAN FRANCISCO, CALIF. City and San Francisco Co., Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Aug. 1. CD 7/10.

ALASKA

HEAVY CONSTRUCTION—LB & CA

† **ALASKA**—Bureau P. Rd., Dpt. Commerce, Federal and Territorial Bldg., Juneau,
Reiten & Stewart Constr. Co., Juneau, Alaska, CA, **$74,698** (4 bidders) clearing, grubbing, grading, draining 3.014 mi. Snug Harbor Rd., Chugach National Forest, Proj. 153-B. Bids July 23. CD 7/11.

† **B-E-C-K Constructors Inc.,** 3647 Stone Way, Seattle, 3, Wash., CA, **$277,150** restoration of 20 family housing units, Eielson Air Force Base, Inv. 57-6, ALASKA. U. S. Eng. Anchorage, Alaska. Bids July 31. CD 7/19.

BUILDINGS—LB & CA

† **J. B. Warrack,** Co. 407 3 Ave. W., Seattle, Wash., CA, **$546,000.** 23,000 sq. ft., rein.-con. grade SCHOOL, Proj. Aaa 50-A-196, DOUGLAS, ALASKA. Alaska Dpt. P. Wks, Dpt. Interior, Box 1181, Juneau, Alaska. Bids July 25. CD 8/3, under LB.

CANADA

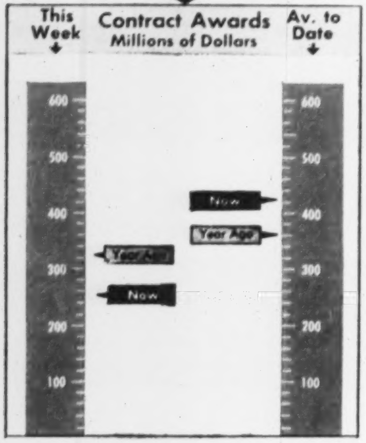
HEAVY CONSTRUCTION—LB & CA

ONTARIO—Dpt. of Hys., Parliament Bldgs., Toronto,
A. Cope & Sons Ltd., 19 Albert St., Hamilton, Ont., LB **$116,216** (4 bidders) grad. base, hot mix paving 2.02 mi. Hy. 56, Binbrook southerly, Hamilton Dist. CD 11/5/43.

Ellins Constr. Co. Ltd., 304 Scarlett Rd., Toronto, Ont., LB **$546,793** (6 bidders) asph. conc. pavement wid'n., and storm sewer at Bathurst St. from Wilson Ave. to Sheppard Ave., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 30.

Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 33 wks 1956	Chge %
	$ millions		
Federal	$99	$1,140.6	—2
State and Municipal	100.7	4,124.3	+20
Total Public	110.6	5,264.9	+15
Total Private	147.5	8,824.2	+18
U. S. Total	$258.1	$14,089.1	+17
By Type of Work			
Waterworks	$3.4	$231.7	+33
Sewerage	12.4	380.4	+56
Bridges	3.6	383.5	+25
Highways	35.5	1,540.9	+11
Earthwork, Waterways	15.1	496.7	+48
Buildings:			
Public, Excl. Hsg	32.2	1,289.2	+13
Public Housing	1.0	217.0	+18
Private Housing	66.7	3,633.2	—11
Commercial	27.7	1,176.3	+7
Industrial	44.3	3,593.9	+100
Unclassified	16.2	1,146.3	—14
U. S. Total	$258.1	$14,089.1	+17

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

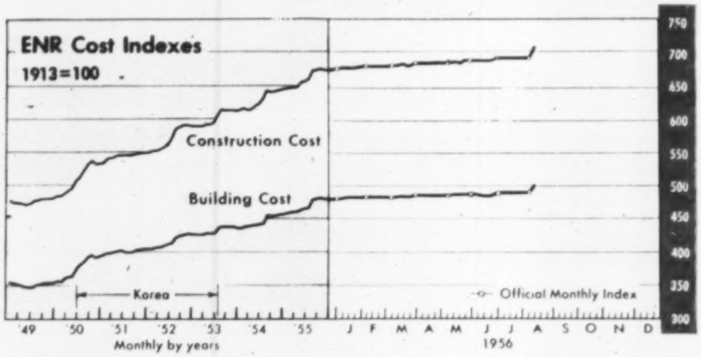
NEW CAPITAL FOR CONSTRUCTION

	Week of Aug. 9	Cum. 32 wks 1956	Chge '55-'56
	$ millions		%
Corporate Securities	$185.5	$2,932.7	+37
State and Municipal:			
All Except Housing	62.1	2,974.8	+11
Housing	....	42.3	—40
Federal Loans	44.4	122.9	+48
Federal Aid	....	1,070.0	+44
Total Nonfederal	$292.0	$7,142.7	+25
Federal Appropriations:			
In U. S.	$368.4	$3,470.3	+572
Outside U. S.	....	15.9	—66
Total New Capital	$660.3	$10,628.9	+70

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Aug. 9 1956	% Change from July 12 1956	% Change from Aug. 11 1955
Construction Cost	706.38	+1.5	+5.0
Building Cost	501.29	+2.3	+1.8

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.845.
1949 = 100: Divide Construction Cost by 1.770; Building Cost by 3.518.



CONTRACTS AWARDED

Millions of dollars	1956 July	1956 7-Mos.	% Change from 1955 July	% Change from 1955 7-Mos.
Total U. S., ENR reported	$1,835.4	$13,198.7	+ 9	+19
Private	1,103.6	8,297.2	+ 8	+20
Public	731.8	4,901.5	+11	+17
State and Municipal	525.4	3,795.2	+18	+24
Federal	206.4	1,106.3	− 3	+0.1
ENR Volume Index, 1913 = 100	740	713*	+ 6	+14

*Average per month.

NEW CONSTRUCTION CAPITAL

Millions of dollars	July	7-Mos.	July	7-Mos.
Total U. S	$1,755.0	$7,834.9	+ 4	+30
State and Municipal Bond Sales	275.7	2,858.3	− 5	+10
Corporate Security Sales	445.5	2,693.7	+49	+30
Federal Loans & Aid (nonfed work)	165.0	1,148.5	−95	+40
Federal Appropriations (fed work)	868.8	1,134.4**	+102	+101

**Includes funds for outside U. S.

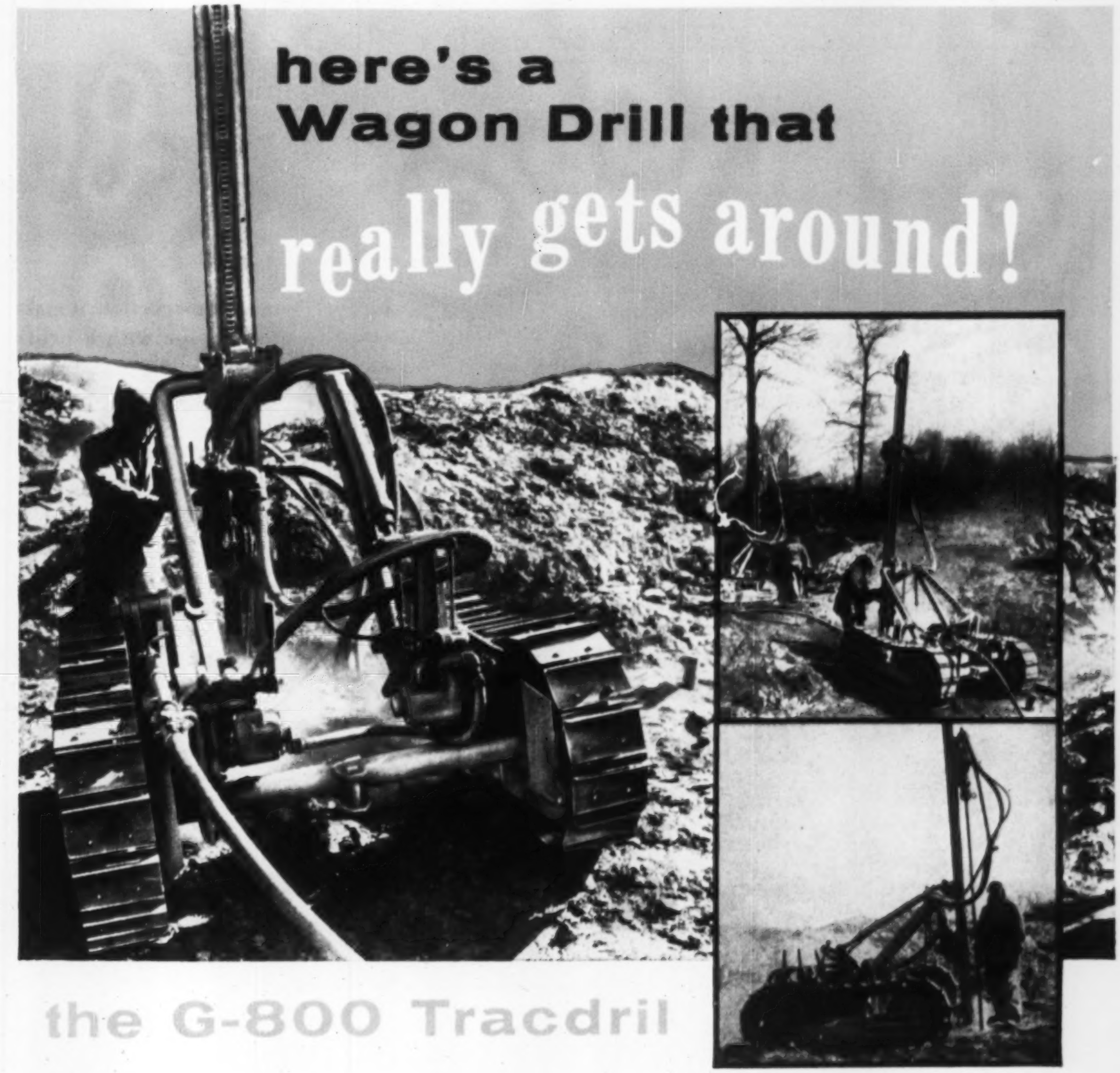
MATERIALS SHIPMENTS

	Unit	1956 Apr. (A) May (M) June (J)	Cum. (No. of Mos.)	% Change fr. Year Ago Mo.	% Change fr. Year Ago Cum.
Portland Cement, Bur Mines	thous bbls	27,087(A)	78,511(4)	+ 8	+ 5
Conc Paving Awards, PCA	thous sq yd	7,679(J)	47,292(6)	−17	− 6
Fabricated Structural Steel	thous tons	285(J)	1,724(6)	+ 1	+22
Bookings, AISC	thous tons	337(J)	2,177(6)	+ 6	+32
Reinforcing Bars, Net, AISI	thous tons	230(M)	1,032(5)	+ 7	+28
Lumber, NLMA	mil fbm	3,373(M)	15,764(5)	− 4	− 3
Orders	mil fbm	3,160(M)	15,711(5)	− 9	− 5
Production	mil fbm	3,423(M)	15,493(5)	−0.3	− 2
Douglas Fir Plywood, DFPA, ⅜" basis					
Production (aver per week)	mil sq ft	88.3(J)	100.5(6)	− 5	+ 5
Orders (average per week)	mil sq ft	95.8(J)	93.5(6)	+19	−0.7
Clay Products, Bur Census					
Brick, Ungl, Common, Face	mil bri	624.7(A)	2,056.3(4)	+ 3	+ 3
Vitrified Clay Sewer Pipe	thous tons	127.8(A)	563.2(4)	−13	+11
Structural Tile, Unglazed	thous tons	58.7(A)	218.9(4)	−16	−17
Asphalt Products, Bur Census—					
Asphalt Roofing	thous sales sqs	5,504(M)	23,424(5)	− 6	− 3
Asphalt Siding	thous sales sqs	78(M)	458(5)	−16	− 5
Aluminum Products, Net, Bur Census					
Sheet and Plate (non-heat treatable)	mil lb	101.1(M)	498.6(5)	+14	+22
Wire and Cable	mil lb	28.6(M)	134.4(5)	+34	+33
Extruded Shapes (soft alloys)	mil lb	54.2(M)	274.6(5)	−0.2	+15

EMPLOYMENT AND FAILURES

	Unit				
Contract Const Employ, BLS	thous	3,235(J)	2,829(6)‡	+10	+10
Contractor Failures, Dun & Bradstreet					
Number		163(J)	865(6)	+43	+33
Liabilities	thous	$8,598(J)	$47,575(6)	+83	+28

‡Average per month.



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Combine the drilling speed of the hard-hitting CP-70NDC Drifter with the adaptability of a CP Drill Carriage and U-arm . . . add the maneuverability of a self-propelled track-mounting that tows its own air supply over rough terrain . . . and you have the One-Man CP Tracdril.

Reversible tramming motors enable the Tracdril to go forward, backward and pivot . . . for faster "moving time" from hole-to-hole, more accurate spotting and more time for productive drilling. "Knee-action" tracks keep the hydraulically operated U-arm support level when operating on uneven ground. The Tracdril has plenty of reserve power . . . can tow a 13,000 pound CP 900 c.f.m. Rotary Compressor up a 10% grade. For details see your CP equipment distributor.

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River crossing installation of 16" flexible joint cast iron pipe for sewer construction at Salina, Kansas.

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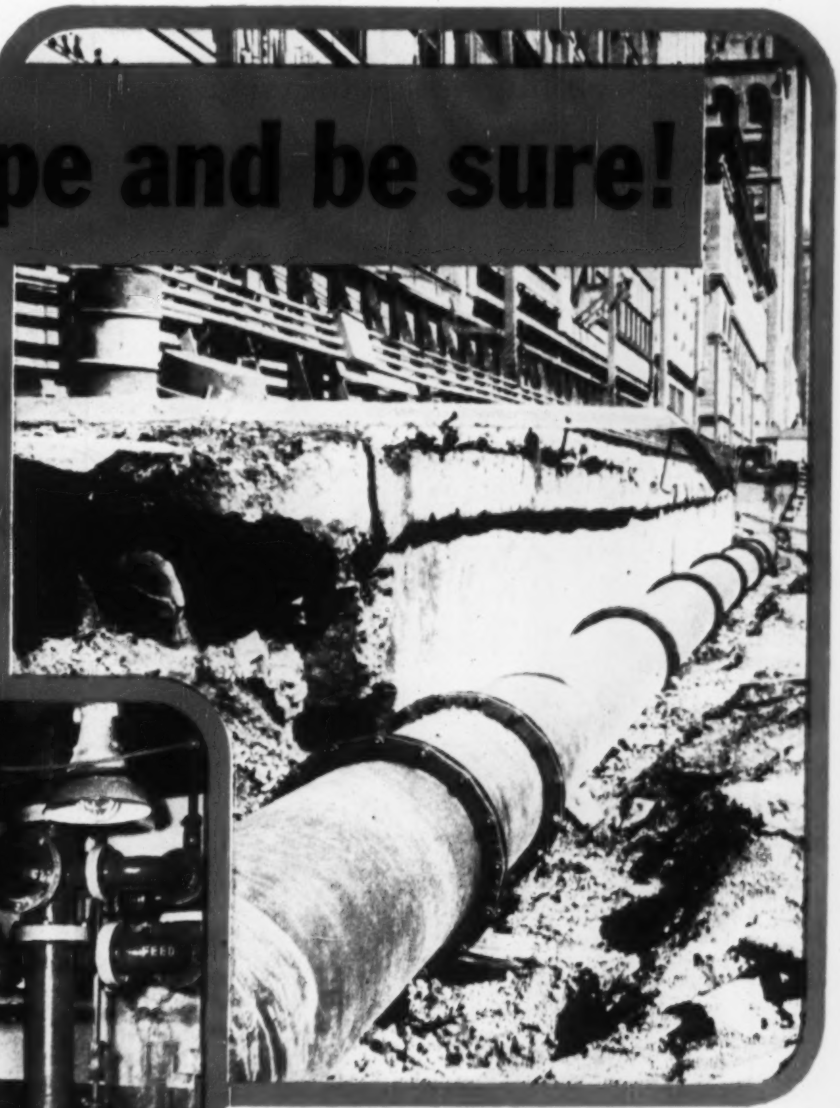
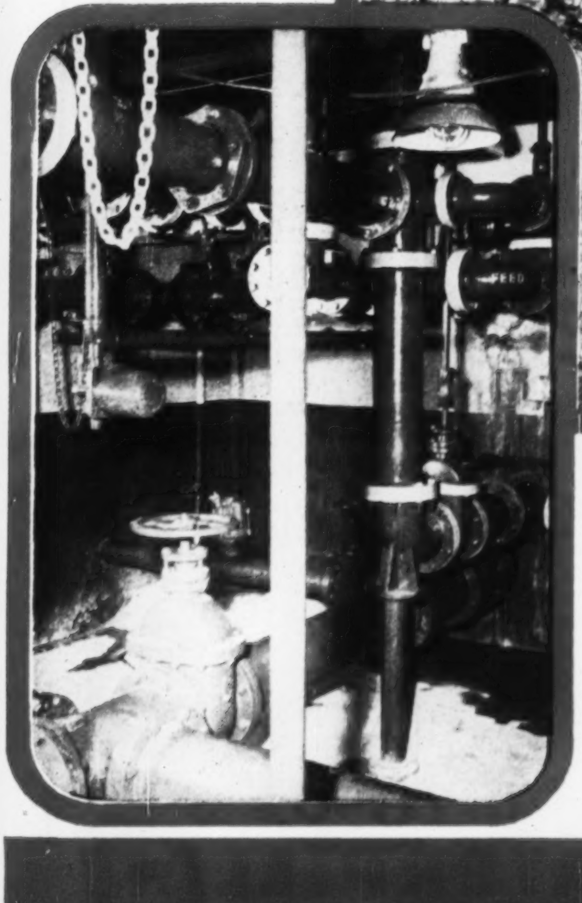
(above)
Four cast iron lines, pulled in pairs across river, being installed for large aluminum producer at Mobile, Ala. (Photo courtesy Aluminum Company of America)

(at right)
Installing cast iron pipe for gas main at Indianapolis, Ind.

CAST IRON PIPE

this pipe and be sure!





(above)
24″ mechanical joint cast iron pipe installed for rerouted water line due to underground garage under Michigan Avenue, Chicago, Ill.

(at left)
Cast iron pipe installation in sewage treatment plant at Dunedin, Fla.

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The No. 12...OUT IN FRONT
...any way you figure!

That's a big, rugged Caterpillar No. 12 Motor Grader out in front of those fast DW20s. It is maintaining haul roads for Gordon H. Ball of Danville, Calif. The job is the new Lafayette Freeway, where a million and a half yards of earth are being moved.

Mr. Ball's No. 12 is new, but already its owner reports it's doing "a top job." This is no surprise to Mr. Ball, who's been relying on CAT* equipment *for 35 years*. He knows the No. 12 is out in front four ways: produces more, costs less to operate, costs less to maintain, lasts longer.

For one thing, the No. 12 has Caterpillar's famous oil clutch. This important improvement increases machine life, cuts down on wear, gives you up to 1500 hours' operation without an adjustment.

For another, tubeless tires are now standard equipment—more economical tires that can eliminate the major portion of tire-caused down time.

There are scores of other features which put and keep the 115 HP No. 12 out in front. New simplified starting controls. Accelerator-decelerator pedal. Extremely accurate power controls. Anti-creep brakes that hold adjustments even under heavy loads. Unexcelled visibility. And of course the heart of the No. 12's rugged durability: the time-proved Cat Diesel Engine.

Your dealer will gladly explain in detail why the Cat No. 12 Motor Grader is a smart investment. Call him, he'll demonstrate—right on your own job.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

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Business and Finance

Steel Prices Climb $8 a Ton

Hike offsets only part of three-year costs, mills warn; industry makes new bid for step-up in amortization aids

After more than four months of advance warning, the construction industry last week learned the bad news on steel prices. Standard carbon structural shapes went up $8 a ton.

The 8.7% increase, second largest rise for structural steel since World War II, wasn't as steep as many observers had expected. Even after the terms of the new wage settlement were known, there was a general feeling that the producers would hike their prices from $10 to $12 a ton.

But the construction industry found little reason to be enthusiastic about the size of the increase.

Aside from the substantially higher price for structurals, construction will pay dearly for other steel.

• **Reinforcing steel up 9.1%**—The mills marked up reinforcing steel prices even more than structurals. The new base mill price is $5.075 per cwt, 42.5 cents above the old price—for a 9.1% rise.

Plates did not move up as much. The new price of $4.85 per cwt is an increase of 35 cents, up 7.8%

Sheet piling went up 8.3%, advancing 45 cents to a new quotation of $5.90 per cwt.

For reinforcing steel, plates and sheet piling, the direct effect of the mill increases is relatively easy to compute. But contractors may pay more for structurals than the mill price would indicate. The reason is that many employees of the steel fabricators are covered by the same agreements as the steel workers in the mills. They share in the wage gains. With higher labor and materials costs, the fabricators presumably will pass this double-barreled increase on to the contractors.

• **Construction costs set record**—Even taken at its face value, the $8 per ton increase in structurals forced construction costs up sharply this week.

The steel price rise added 10 points to the ENR 20-Cities Building and Construction Cost Indexes, and set a pair of records in the process.

ENR's Construction Cost Index soared over the 700 mark for the first time in history (1913=100). At 706, the index is now 5% higher than a year ago.

ENR's Building Cost Index, also based on 1913=100 climbed over the 500 mark for the first time. At 501, it's 4.8% higher than a year ago.

Piled on top of a series of increases in recent years, the latest boost means that structural steel prices have more than doubled since 1946, and have been an important factor in pushing construction costs to new highs.

Even worse, in some respects, was the scarcely-veiled warning of later price increases. With a noteworthy unanimity, most steel producers joined U.S. Steel in saying that the present price increase covers only the higher labor costs the companies will incur in the first year of their new three-year wage contract.

They spelled out the thought that the pre-determined wage boosts for the second and third years of the wage agreement could bring with them still higher steel prices.

And, the producers also stressed a theme that the new prices "don't provide a solution to inadequate depreciation allowances. . . . Nor do they attempt to provide a solution to the many problems attending the expansion programs."

• **Why $8 a ton?**—Because of the impact on costs, some contractors winced at the thought of paying $8 a ton more for structurals and proportionately higher prices for reinforcing bars and plates. And, they raised the question: How does the steel industry figure its prices?

The first point is that wage increases are directly related to price rises. According to the union's figures, steelworkers pick up an additional 20.3 cents an hour the first year, 12.2 cents the second year; and 13.1 the third.

The steel companies figure a little differently. They estimate the cost of the settlement higher because of higher payments they must make on social security, unemployment compensation and other items that are chargeable to the payroll but don't show up in the workers' checks. For the first year of the new settlement, steel companies estimate the hourly increase in wage costs at 24 cents, instead of the 20.3 cited by the union.

With this wage cost determined, the steel companies fall back on an oft-quoted rule of thumb: Each cent per hour increase in wages means an increase of 40 cents a ton in the price of steel. This is the 40 to 1 formula, which includes the industry's estimate of higher prices it will pay for the material it buys to produce steel.

At the 40 to 1 ratio, with wage costs estimated at 24 cents an hour more this year, the steel industry could have posted an increase of $9.60 a ton. But they stopped short of this figure. Why? Politics, depreciation and U.S. Steel give some clues.

The politics of a healthy price increase in such a basic commodity as steel stems from the threat of a sudden inflation in an election year. The steel companies have publicly arrayed themselves with the Adminis-

Structural Steel Prices Double in 10 Years

Base price of carbon steel standard structural shapes, fob Birmingham, Gary, and Pittsburgh mills

Date		Price	Change from Previous Price	
		$/Cwt	$/Cwt	%
1946	February	$2.35	+$0.283	+13.7
1947	January	2.50	+0.15	+6.4
	July	2.80	+0.30	+12.0
1948	April	2.75	−0.05	−1.8
	July	3.25	+0.50	+18.2
1949	December	3.40	+0.15	+4.6
1950	December	3.65	+0.25	+7.4
1951		3.65	No change	
1952	July	3.85	+0.20	+5.5
1953	June	4.10	+0.25	+6.5
1954	July	4.25	+0.15	+3.7
1955	July	4.60	+0.35	+8.2
1956	August	5.00	+0.40	+8.7

tration, which they feel is sympathetic to the problems of business.

A too-steep price rise would, some steelmen feel, create a serious public relations problem and would set off an inflationary wage-price spiral throughout the entire economy that could be highly embarrassing to the Administration.

Depreciation is the second key to the less-than-expected steel price rise.

The steel industry has added more than 36,000,000 tons of capacity in the past ten years and plans to boost capacity another 15,000,000 tons by the end of 1958. Cost of this expansion is estimated at a minimum of $1 billion a year. Where does the money come from?

Essentially, money for expansion comes from four sources: depreciation reserves, retained earnings, borrowing and equity capital.

Fat profits would be needed to handle the expansion from retained earnings, or even from borrowing or equity capital, steelmen say, because the industry can't successfully borrow money or sell stock unless lenders or investors see a good return on their money. That argument, of course, would lead inevitably to much higher prices for steel.

An alternative, according to steel producers, is a liberal amortization plan that would give steel companies big tax benefits—and leave them with a higher net profit per dollar of sales.

Although the government gave the industry fast tax write-offs during the Korean War period because of the forced draft expansion, those certificates aren't helping much now. And, for the last year the government has been slow to grant such certificates for steel mills.

U.S. Steel has led the fight for liberalized depreciation and it is still punching away. Other steel firms, although concerned with the same matter, wanted price increases of $10 to $12 a ton right now—partly to help pay for expansion. U.S. Steel has said "No." Obviously, it will be in a better position to argue for the tax aids if it isn't accused of price-gouging.

Other steel firms are privately champing at the bit over U.S. Steel's reluctance to hike prices to the limit now. But two things are clear: Other steel firms can't get more for their steel than the Corporation—even when steel is tight in some fields, such as construction. And, too, construction (like everyone else) will pay more for steel next year and the year after that—whether or not the tax aids are forthcoming, because the wage increases for the steelworkers must be "covered" as they take effect in the second and third years of the contract.

Aluminum Prices Up, Too

Contractors will pay more for aluminum as well as steel. The wrap-up of the short-lived aluminum strike brought with it a price hike of 1.2 cents a pound for ingot.

The new ingot price of 27.1 cents a pound is the highest in 30 years.

Sheet, strip, rod and plate, for which the construction industry is a big customer, will go up an average of 4% over present prices.

Easier Borrowing

Lenders get mortgage aid, but discount rate is stiff

The Federal National Mortgage Association last week made it a little easier for the homebuilding industry to get more mortgage money.

Fannie Mae reduced its common stock subscription requirement from 3% to 2% of the principal amount of the mortgages purchased by the association. The move was authorized under the new Housing Act of 1956.

But the agency also acted to stave off a stampede for Fannie Mae's aid. It will issue advance commitments to purchase FHA and VA mortgages in its secondary market operations at prices far enough under the regular purchase prices to prevent "excessive sales."

This restraint was imposed by Congress in the new law.

Under the new advance commitment authority, Fannie Mae can issue "standby" commitments. When the mortgages are ready for sale, the holders (lenders or builders) have the option of selling the mortgage to Fannie Mae at the pre-arranged price or selling the mortgage to someone else.

Fannie Mae's standby commitments made in the secondary market operations will be for a term of one year. For the present, they will be issued at a uniform purchase price of 92.

Such a price is only attractive when mortgage money is extremely tight. It represents a substantial discount. Fannie Mae, in effect, is offering to buy a $10,000 mortgage for $9,200 any time within one year from the time it makes the advance commitment.

To get the commitment, a bank or builder will be required to make a non-refundable cash payment equal to 1% of the face value of the mortgages involved. The seller of the mortgage would receive Fannie Mae common stock in an amount equal to one-half of the cash payment.

If the mortgages are delivered to Fannie Mae for sale under the commitment, the sellers would have to purchase an additional 1% of common stock (to meet the total 2% requirement), but no other fees or charges would be made.

Construction Outlays Set All-Time Record for July

Expenditures for construction put-in-place set an all-time monthly high of more than $4.2 billion in July, according to estimates of the Commerce and Labor Departments.

Private non-residential building and public construction both set records.

Outlays for private non-residential building are running 19% ahead of 1955 on a seven-month aggregate basis. This total has been pushed by a better-than-expected gain in industrial building (up 29%) and substantial increases in commercial building.

Office and warehouse construction put-in-place is 19% ahead of last year, and the volume of expenditures for stores, restaurants, garages and similar structures is 18% over the comparable 1955 period.

Housing outlays for the first seven months trail 1955 by 11%. July private residential work reached the highest point for the year to date at $1.2 billion. But this was 15% under the all-time peak of $1.4 billion reported for July of last year.

Plywood Sales Sag

Prices fall to pre-Korea level as demand declines

Douglas fir plywood mills cut the price of sanded plywood by 5% last week.

Some mills complained that they are losing money at the new price, the lowest for sanded Douglas fir since the Korean War.

However, some industry sources expect the latest price reduction to be only temporary. These observers predict plywood prices will edge up a little within the next two weeks.

The drop in prices reflects the softening in demand. Mill shipments in May and June were 3% and 5% below the corresponding months last year. Moreover, the backlog of orders has been fading rapidly.

July Housing Starts Down 18% From '55

July housing starts, released today by the Bureau of Labor Statistics, won't offer much comfort to homebuilders.

Total starts for the month: 101,000, down 18% from the 122,700 reported for July 1955. The 101,000 represented a noticeable drop even from June's 104,000, even though BLS said the seasonally adjusted annual rate for the two months was identical at 1,070,000.

The July total included 1,900 public housing units and 99,100 private dwelling units.

• **Private work slides**—The total for private starts was down 18.7% from July 1955 when 121,900 units were reported. It was also well below the 112,900 listed for July 1954. But last month's private starts ran slightly ahead of July 1953.

Homebuilders, who have been critical of the Administration's credit policies, may try to use the latest figures for more ammunition in their current fight to cut downpayment requirements on FHA and VA mortgage loans.

Pessimism had been widespread among some homebuilders. Administration sources feel the total could drop below the million mark, but not much below. Private estimators have been more doleful in their outlook.

The June drop was the first in three months. It carries starts to the lowest point they have reached in a slide that started about a year ago, when government agencies tightened up on credit.

• **See continued decline**—The June dip signals a continuation of the decline, but a mild one, according to economists who watch housing for Dr. Arthur F. Burns, chairman of the President's Council of Economic Advisors.

These economists point out that some spokesmen for the homebuilders have been warning of a drop down to a level of 800,000 starts a year. Administration economists think the monthly rate may drop under a 1,000,000-a-year clip—but they don't think it will go as low as 800,000.

• **How far down?**—Private builders, however, forecast a minimum drop of 250,000 starts this year at a cost of more than $3 billion to the economy.

That was the prediction of John M. Dickerman, executive director of the National Assn. of Homebuilders. Dickerman blames the slump on credit restrictions and tight mortgage money.

"The annual rate is now dropping to close to 1,000,000 starts as compared with the 1,335,000 new units produced in 1955," Dickerman said. "And yet, the Administration persists in maintaining the credit controls imposed under completely different conditions a year ago."

The 1954-55 boom in housing hit its peak month for new starts last May. Starts that month were at an annual rate of 1,398,000.

In July 1955, authorities slowed the pace down by putting on a minimum 2% downpayment for GI home loans, and by increasing FHA minimum downpayments from 5% to 7%.

Maximum amortization periods for GI and FHA mortgages, which had run up to 30 years, were pulled back to 25 years last July, but this restriction was eased at the beginning of this year as a concession to homebuilders.

• **Call for action**—The Administration hasn't been anxious to make any further concessions to the homebuilders in the credit field, although officials have been watching the housing picture closely and have conferred frequently with the NAHB.

"There has been a great deal of discussion about removing the 2% downpayment requirement," Dickerman said, "but conversation is not halting the skid in housing starts. What we need is action—and fast."

The NAHB official noted that housing starts have dropped almost steadily since the imposition of the credit restrictions a year ago.

There has also been a drastic drop in applications for FHA mortgage commitments and in requests for VA appraisals.

FHA applications dropped from 22,100 in May to 16,800 in June. The year before, they were running 30,800.

VA appraisal requests dipped from 44,400 in May to 35,000 in June—as against 52,400 in June 1955.

Private housing starts during the first six months of this year totaled 559,000—down 126,000 from a year ago.

• **Money and land**—The homebuilders' troubles probably wouldn't be solved just by easing downpayment requirements.

ENR surveys conducted in recent months indicate that builders themselves have had some difficulties in getting financing and that many builders in the metropolitan regions are running out of land close enough to the cities to warrant development.

Another unknown in the housing picture is the question of price. Higher land and construction costs, the addition of appliances in many cases, and the trend to larger houses combine to push home prices up. That may be forcing some prospective buyers out of the market.

Business Briefs . . .

• **Higher earnings**—Net earnings of Raymond Concrete Pile Co. jumped to $2.30 a share for the first six months of this year, as against $1.35 a share in the same period last year. The company explained that there was a "substantial increase in completed work . . . and the introduction of more efficient operating methods and equipment."

• **Reap the "windfall"**—The federal government brought suit against two firms in an attempt to recover alleged "windfalls" in the Old Section 608 program. In one case, the government seeks to recover nearly $1.9 million from developers of the Shirley-Duke Apartments in Alexandria, Va. In the other case, which is related, the government wants to get back nearly $1 million from Investors Diversified Services, Inc., an investment firm that participated in the financing of the Shirley-Duke Apartments. The government charges that IDS received financing fees and interest in excess of the amounts permitted under FHA regulations.

• **Builder loses suit**—A Detroit builder who brought suit against St. Clair Shores, Mich., for "excessive and unreasonable building fees" lost his case in a state Circuit Court, when the judge ruled the city had the authority to set fees. The suit was filed last year when St. Clair Shores doubled residential building fees to $140 per unit. The measure netted the community an additional quarter of a million dollars in fees in two years.

• **Record earnings**—Bucyrus-Erie posted the highest net earnings for any six months in its history, $4,116,288. That was up 52.8% over the corresponding period of 1955.

Davis-Bacon, New Procedures

Amended regulations for prevailing wage determinations improve both data collection and the chance to be heard

Secretary of Labor James P. Mitchell has revised the procedures used by his department in the predetermination of wage rates under the Davis-Bacon Act. The revision is reflected in an amendment to Part 1, Title 29, Code of Federal Regulations.

Largely addressed to some of the long-standing criticisms of pervailing wage determinations, the amendment is of particular significance in three respects:

1. It makes it clear that wage determinations for highway purposes shall be based on wages paid in the immediate locality of the proposed construction. For other types of work, the broader limitation of "city, town, village or other civil subdivision" still applies.

2. A continuing program of obtaining and compiling wage rate information will be developed. Emphasis is placed on proper identification of rates by type of construction, and specific sources of information that will be used are listed.

3. When hearings are held in the future—in cases where existing information is inadequate—all interested parties will be given an opportunity during and after the hearing to express their views before the Secretary of Labor makes a final determination.

The regulations, as amended, are applicable to Labor Department wage determinations for construction undertaken under the following laws: Davis-Bacon Act, National Housing Act, Hospital Survey and Construction Act, Federal Airport Act, Housing Act of 1949, School Survey and Construction Act of 1950, Defense Housing and Community Facilities and Services Act of 1951, and Federal-Aid Highway Act of 1956.

• Area restriction—Generally speaking, the Secretary of Labor will base his wage determinations on the rates being paid for similar work "in the area" where the work is to be performed.

For construction under all except the Highway Act, this means the wages pervailing in the "city, town, village or other civil subdivision" in which the project falls. In such instances, it is possible to roam through a county-wide area in search of the prevailing wage.

But for purposes of highway construction, the area is specifically limited to the "immediate locality of the proposed project." In this respect, the new regulations follow the language of the statute and what appears to have been the intent of Congress (ENR July 5, p. 180).

• Continuous process—In order to reduce blind spots to a minimum, however, and to give an accurate base to determinations, the regulations look forward to a continuous inflow of wage rate information.

Contractors, contractor associations, labor organizations and other interested parties will be encouraged to submit voluntarily to the Labor Department as much pertinent and detailed data as possible.

Information submitted will be required to be specific as to the type of construction to which it applies, such as buildings, bridges, dams, highways, tunnels, sewers, power lines, railways.

• Hearings—When blind spots do arise, it's still up to the Solicitor of the department to decide whether a hearing should be held. As in the past, the investigation will be conducted at the project area.

But under the new procedure all interested parties must be notified of the hearing, and pre-hearing conferences with interested parties in attendance may be held to speed up the investigation.

After the hearing examiner has drafted his porposed determination, every interested party gets a copy of the proposal and has five days in which to submit his comments. These, together with the examiner's report and proposal are then forwarded to the Secretary of Labor, who makes the final determination.

Wage Increases Obtained For Survey Party Members

A new master agreement signed in San Francisco between Local 3 of the operating engineers and the Bay Counties Civil Engineers and Land Surveyors Association grants a 15-cent hourly increase to members of survey parties, and boosts the rate of head chainmen by 27 cents.

Expected to set a pattern for other engineering associations in northern California, the new agreement covers 1,000 union members employed by 34 engineering firms in four chapters of BCCELSA and some 40 independent firms.

Included in the contract, which became effective last week, is a provision for payment of time and a half for travel time beyond 40 mi. The new rate range runs from \$2.45 to \$3.35 an hour.

Industry Has Some Major Labor Pacts

Nearly eight percent of the nation's major collective bargaining agreements—those covering at least 1,000 workers—are in the construction industry. All were negotiated by multiemployer groups, often on a regional basis, and almost a third of them run for two years.

These are the conclusions of the U. S. Labor Department's Bureau of Labor Statistics based on a study of 1,737 major contracts in effect early this year. As far as the bureau could tell this closely represented the total number of major contracts (covering 1,000 or more workers) in all industries, including both manufacturing and nonmanufacturing.

Of these, 133—nearly 23% of all major contracts in nonmanufacturing industries—were in the construction industry and covered 610,200 workers.

Ten of the agreements were interregional in nature, and more than half the balance were in the Middle Atlantic (37) and Pacific (32) states.

The traditional one-year term was found to be no longer predominant—65% of all the major agreements for which duration information was available were for two years or more.

For major agreements in the construction industry, the picture looked like this: one year—29; two years—43; three years—12; five years—15.

Eight of the contracts, however, ran for longer than one year but less than two years, and three of them had a duration of more than three, but less than five years.

The long-term agreements, the bureau noted, usually contained a reopening clause or provided for some form of automatic adjustments, such as wage increases based on changes in the BLS consumer price index.

Politics in Plain Language

Last Friday in Chicago, AFL-CIO president George Meany presented labor's platform proposals to the Platform Committee of the Democratic National Convention. Included on the list were many items that the building trades have vigorously pushed.

For the time being, at least, labor will remain officially nonpartisan because its primary interest is in legislative results.

With his characteristic candor, Meany told the committee what labor expects from political candidates and what political candidates can expect from labor, and then he launched into his specific and comprehensive proposals, among which were these:

A complete overhaul of the Taft Hartley Act, including repeal of Section 14 (b) from which state right-to-work laws stem.

Strengthening of the Walsh-Healy Public Contracts, and Davis-Bacon Acts, and new procedures for enforcement of labor standards generally.

A housing program for 2,000,000 dwelling units a year.

Additional federal and state programs to meet the shortages of schools, hospitals, and other public services.

The same proposals are being presented today to the Platform Committee of the Republican National Convention in San Francisco.

• **Economics**—In general, many of the proposals relating to domestic affairs are closely tied to the federation's economic philosophy. The key to prosperity, it believes, is a broad consumer base and a high wage policy "which will give America's millions the purchasing power that matches her productive ability."

And Meany made it clear that labor is no longer an isolated group, when he reminded the Democrats that "the AFL-CIO today is the largest single organization in the United States. It represents more than 15,000,000 American working men and women."

• **Platforms**—As far as the political platforms go, he said, "We distrust those who take the position that platforms should seem to be all things to all men, but in practice, mean little to anyone."

He called for use of plain language, free of "weasel words, glittering generalities or the advertising man's glib insincerity."

To the AFL-CIO Meany said, a platform is "a solemn obligation upon the party and upon the party's candidates."

• **Actions**—As a further challenge to both political parties, the AFL-CIO leader reminded the committee that the federation "is committed to a strictly non-partisan political policy. We will not become a part of any political party, nor attempt to dominate any political party."

In Meany's words, the AFL-CIO strategy is this: "We will do our utmost to persuade union members and their families and friends to register and vote; we will distribute, as widely as we can, factual information on the candidates and the issues; and we will endorse candidates on the basis of their record and platforms, regardless of their political affiliation."

Social Security

Congressional changes win praise and criticism

The disability and retirement provisions of the Social Security amendments approved by the 84th Congress have been singled out for criticism by management and for praise by labor. Both items are of growing interest to organized labor generally, and the hazards of construction work have given many building tradesmen a particular interest in sickness and disability insurance, especially at the state level."

The new amendments provide for cash benefits for permanent and total disability at age 50, the plan to be financed by a one-half of one percent tax shared equally by the employer and employee. Full retirement benefits are provided for widows at age 62, and a system of graduated pensions commencing at age 62 is included for retired women workers and wives of retired workers.

In a letter urging President Eisenhower to veto the bill, the National Chamber of Commerce described the disability plan as "unnecessary and unwarranted" and as a "new concept on which the national government should not embark." The lowering of retirement ages for women, it said, is contrary to the present trend of higher retirement ages in private industry, a trend which increased lon-

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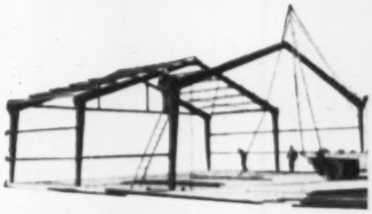

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While your foundation is curing, pre-engineered and factory formed and punched Butler parts are delivered to your site. In days, the sturdy rigid frame is up and die-formed cover panels are going on.

Within days of the start of structural work, your Butler building is under roof, and interior finishing under way. Almost before you realize, you're in business. For other Butler advantages, write on your company letterhead for free literature, or see your Butler Builder.

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gevity has induced. These two provisions, the Chamber noted, would be only "inital steps" toward "greater premiums on premature retirement, and a greater relaxation of standards and aid for permanent and total disability."

AFL-CIO President George Meany, on the other hand, said the "American people have been well served by the modernization of the Social Security Act." In his analysis of the 84th Congress, he called this action, together with the higher minimum wage, "a tribute to the leadership of the Congress and to those members, from both parties, who ignored partisanship to provide the margin of victory for the people's welfare."

Rhodesian Bidding

Italians refute charge of low wages on Kariba Dam

Successful bidding by Italian firms on the Kariba Dam in Rhodesia has generated some resentment on the part of British contractors, who feel they "were at a great disadvantage in making tenders owing to the lower wages and conditions accepted by the Italians".

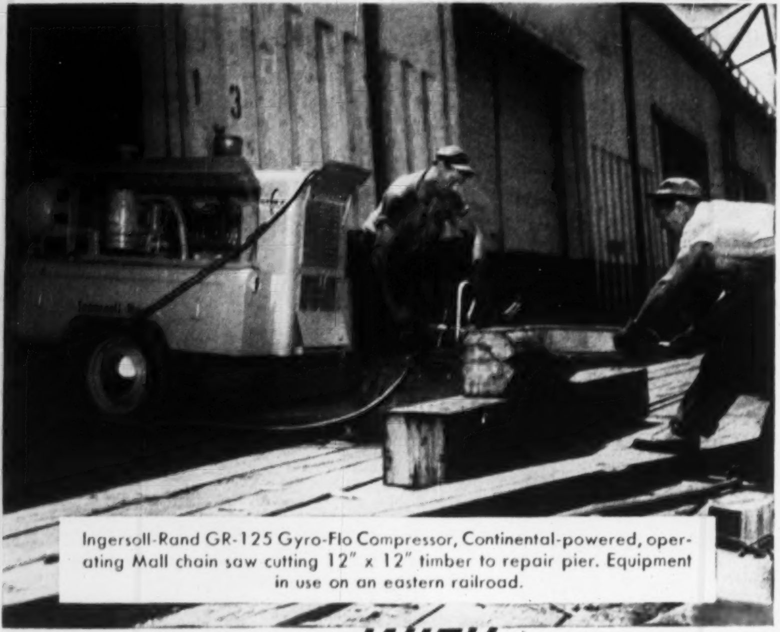
The dam, 130 meters high, will be built across the Zambesi River to form an artificial lake for a hydroelectric power station that will generate 7,000,000,000 kwh per year. Contracts for most of the $96-million project were won by Italian firms who are sending from Italy about 80 engineers and 600 specialized workers.

In refuting the British charges, engineer Francesco Pennacchioni, general manager of one of the firms in the Italian combine, stated that Italian engineers and workers on the Rhodesian project will be paid on the same scale as European emigrants employed by British firms. A worker will generally earn twice as much as he would receive for similar specialized work in his own country.

At the same time, Pennacchioni noted that the Italian firms are neither directly nor indirectly connected with public interests. "Neither our group," he said, "nor Italian entrepreneurs in general who carry out work abroad are subsidized in any way by the Italian government."

The four firms in the Italian combine for the Kariba Dam are Imprese Italiane all'Estero, Impresa Girola, Impresa Ing. Lodigiani, and Impresa Ing. G. Torno & Co. All have had broad experience in hydro-electric construction work.

SPEED UP THESE TOUGH JOBS



Ingersoll-Rand GR-125 Gyro-Flo Compressor, Continental-powered, operating Mall chain saw cutting 12" x 12" timber to repair pier. Equipment in use on an eastern railroad.

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U. S. MILITARY REQUESTS SEALER IMPROVEMENT FOR JET USE

Jet aircraft usage has required joint sealing compound manufacturers to develop a better sealing compound for concrete runways. A compound that would be practical for use by jet aircraft. Engineers stipulated that the compound should be improved in adhesion, cohesion, resilience and ductility at low temperatures. Primarily, IT MUST WITHSTAND THE TERRIFIC HEAT AND **BLAST FORCES** OF JETS, as well as be resistant to jet fuel. This compound must be simple to apply, quick to cure and be within the economic limits of federal military budgets. ALLIED USED THESE RECOMMENDATIONS AS **MINIMUM REQUIREMENTS** IN THE DEVELOPMENT OF ALLIED JET SEAL.

ALLIED
MATERIALS CORP.

PRODUCERS, REFINERS AND COMPOUNDERS FOR OVER 25 YEARS

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PERFECT FOR JET RUNWAYS

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Runways where Allied JET SEAL has been used can be opened to foot traffic in thirty minutes and heavy aircraft traffic, such as a 456,000 lb. gross load jet bomber in eight hours.

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In addition to its other characteristics, Allied JET SEAL is unaffected by jet fuel, oil and solvents.

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Allied JET SEAL is well within the monies appropriated to the Armed Forces for airfield use. Admittedly the initial cost for Allied JET SEAL will be slightly higher; however, maintenance cost will be greatly reduced. The expectant life of the sealer material is increased as much as 250% over presently used J.F.R. materials.

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Allied JET SEAL is a two-component cold applied compound. When the two components are mixed, they set up immediately; therefore, they must be kept separated until just before entering the joint. Allied has developed special equipment that proportions, pumps, mixes and places the compound automatically, making the operation even simpler than previous methods. This equipment is available to contractors, qualified agencies or individuals by purchase or lease.

Allied Materials Corporation also manufactures regular joint sealing compounds meeting Federal Specifications SS-S-164 and SS-S-159. Write for additional information.

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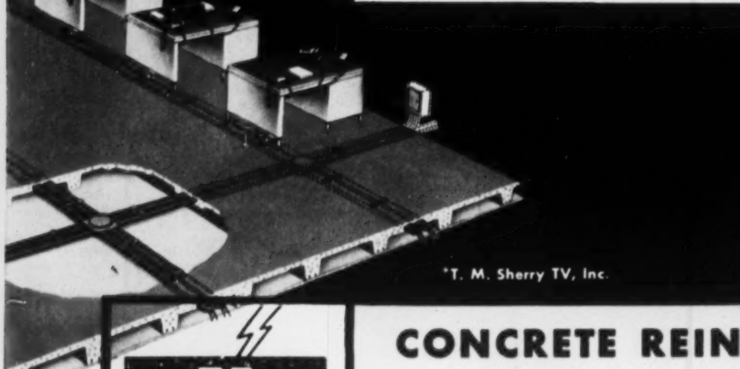

Los Angeles Police Administration Building	**Building**
Associated Architects: Welton Becket, F.A.I.A., and Associates and J. E. Stanton	**Architects**
Associated Structural Engineers: Murray Erick and Paul E. Jeffers	**Engineers**
General Contractors: Morrison-Knudsen Co., Inc. and Ford J. Twaits Co. (joint venture)	**Contractors**

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Bids: August 23, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 23rd day of August 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany, N. Y.						
Albany (Rte. 9W)	RC 56-64	Southern Boulevard, S.H. 9101	0.09	Bridge Repair & Misc. Work	$14,000 Plans $10	$250,000
Essex (Rte. 28N)	FARC 56-66	Alden Lair-Newcomb, Pt. 1 & 2, S.H. 5187 & 756 Proj. No. S210(1)	7.38	Asp. Conc., Opt. = 7.35 Mi. Misc. Work = 0.03 Mi.	$66,000 Plans $25	1,200,000
Essex	FASS 56-8	Tahawus-Schroon River, Pt. 2 Proj. No. S-1047(3)	1.67	Asp. Conc., Opt. = 1.60 Mi. Misc. Work = 0.07 Mi.	$16,000 Plans $10	290,000
Washington (Rte. 22)	RC 56-65	Cambridge-Salem, Pt. 3, S.H. 5316	0.07	Asp. Conc. Opt.	$900 Plans $10	17,000
DISTRICT No. 2, L. Ketchum, 109 No. Genesee St., Utica 1, N. Y. (Dist. Engr.)						
Herkimer	US-91	Lock 17 Erie Canal at Little Falls	....	New Lower Gate New Operating Machinery & Other Misc. Work	5% of Bid Plans $25	Not Published
Oneida	M-56-5	Alder Creek Dam on Black River	....	Repairs to Dam (Resurface Spillway with 12" Conc. & other Misc. Work)	$7,000 Plans $10	131,395
DISTRICT No. 3, Wm. Robinson, District Engineer, 301 E. Water St., Syracuse, N. Y.						
Onondaga (Rte. 5)	FARC 56-53 RC56-54	Elbridge-Camillus, Pt. 1, S.H. 5080 Camillus-Fairmount, Pt. 1, S.H. 5318A & 5318 Camillus-Fairmount, Pt. 2, S.H. 5016 Proj. No. F-446(5)	5.66	Asp. Conc. Ty. 1A	$27,000 Plans $10	461,000
Onondaga (Rte. 298)	FARC 56-47 FASH 56-3	Syracuse-Bridgeport, Pt. 1, S.H. 672 Syracuse-Bridgeport, SH 672A Syracuse Bridgeport, Pt. 3 Proj. No. U-UG 994(5)	2.70 (2.11 Acc.)	9" Cem. Conc. Pavt. 2 at 37' Var. Wide = 3.59 Mi. Asp. Conc. Ty. 2A = 1.22 Mi. R. C. Box Culv. Br. 25' R. R. Sep. I-Beam 103.7'	$140,000 Plans $25	2,570,000
Oswego (Rte. 57)	FAC 56-10	City of Fulton: North South Arterial (First, Fourth & Second St.) Proj. No. U-583(7)	2.49 (0.42 Acc.)	Asp. Conc. Ty. 2A = 1.77 Mi. 9" Cem. Conc. Pavt. 24'-52' Var. Wide = 0.72 Mi. Misc. Work = 0.42 Mi.	$52,000 Plans $15	590,000
DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, N. Y.						
Orleans (Rte. 31)	FARC 56-56	Medina-Albion, S.H. 5469 Albion-Fancher, S.H. 5422 Proj. No. F-1037(2)	6.56	Asp. Conc., Opt.	$21,000 Plans $10	382,000
DISTRICT No. 6, J. H. Thomas, Distict Engineer, 30 W. Main St., Hornell, N. Y.						
Steuben (Rte. 70)	FARC 56-57	Big Creek, Pts. 1, 2 & 3 S.H. 906-1000 Proj. No. F-867(3)	5.19	Asp. Conc., Opt.	$22,000 Plans $10	390,000
DISTRICT No. 8, K. G. Racer, Acting District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Columbia (Rte. 22)	FERC 56-58	Copake Iron Works-Copake S.H. 5645 Proj. No. ER-29(1)	0.09	Slope Protection	$775 Plans $10	14,000
Dutchess (Rte. 22)	FERC 56-59	Amenia-Wassaic, S.H. 537 Amenia-Sharon Station, S.H. 712 Proj. No. ER-23(1)	0.30	9" Cem. Conc. Pavt. 24' Wide	$4,500 Plans $10	82,000
Ulster	BA 56-1P	West Approach: Kingston-Rhinecliff Bridge (Cont. 6)	0.31	9" Cem. Conc. Pavt. 36'-68' Wide	$6,500 Plans $10	119,000
Ulster	BA56-3TP	West Approach: Kingston-Rhinecliff Bridge	0.37	Bit. Mac. Pen. Method Asphalt	$800 Plans $10	11,000
Ulster	FESS 56-7	Spring Glen Road Proj. No. ER-27(3)	0.28	Asp. Conc., Opt.	$4,700 Plans $10	87,000
Ulster (Rte. 209)	FERC 56-62	Kingston-Ellenville, Pt. 3, S.H. 141 Proj. No. ER-60(1)	0.15	Restoration of Stream Channe	$2,700 Plans $10	50,000
DISTRICT No. 9, J. C. Frederick, District Engineer, 71 Frederick St., Binghamton 21F, N. Y.						
Schoharie (Rte. 7)	FARC 56-60	Vroman-Howes Cave, S.H. 5195 Central Bridge-Quaker Street, Pt. 1, S.H. 5619 Proj. No. F-655(8)	3.47	Asp. Conc., Opt.	$12,000 Plans $10	214,000
Sullivan (Rte. 209)	FERC 56-67	Wurtsboro-Ellenville, S.H. 8080 Proj. No. ER-34(1)	0.76	Asp. Conc., Opt. 2 Prestressed Precast Conc. Brs. 41' & 36'	$15,000 Plans $10	280,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: September 11, 1956

Contract PN-250.005

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
WATER MAINS AND HYDRANTS

Sealed proposals for the furnishing and installation of water mains and hydrants on the south side of the City Channel, Port Newark, N. J., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, September 11, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $20.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 16, 1956

Bids: September 11, 1956

Contract PN-250.007

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
WATER MAIN UNDER CITY CHANNEL

Sealed proposals for construction of a water main under the City Channel at Port Newark, N. J., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, September 11, 1956 at which time said proposal will be opened and read in Room 1108.

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THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 16, 1956

OFFICIAL PROPOSAL

RATE: $2.10 per line (or fraction) per insertion

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: August 23, 1956

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y. Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 23, 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON RT. 17 EXPRESSWAY, TYLERS SWITCH-HANCOCK, TOWNSHIP OF HANCOCK, DELAWARE COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-94

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.

(b) Mr. J. C. Federick, District Engineer, 71 Frederick Street, Binghamton, New York.

(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $6575.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $350.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF
PUBLIC WORKS

Bids: August 28, 1956

The Richmond-Petersburg Turnpike Authority
Richmond, Va.

August 3, 1956

NOTICE IS HEREBY GIVEN that Sealed Bids will be received by The Richmond-Petersburg Turnpike Authority for:

CONTRACT NO. A-3-G, SECTION A

Construction of the Richmond-Petersburg Turnpike, Contract A-3-G, Section A, Grading, Drainage, Paving and Structures from 13th Street to St. James Street, in the City of Richmond, Virginia.

Bids for the above described work will be received at the office of The Richmond-Petersburg Turnpike Authority, 1015 East Main Street or by mail at P. O. Box 1-R, Richmond 2, Va., until 10:00 A.M. (EST) 11:00 A.M. (DST), Tuesday, August 28, 1956 and will be publicly opened and read aloud immediately thereafter in the Hunt Room of the Hotel Raleigh, 9th and Banks Streets, Richmond, Va.

Bids will be received only from those bidders who are registered in the State of Virginia and who are prequalified with The Richmond-Petersburg Turnpike Authority. Plans, Specifications, Proposal, and form of Proposal Bond, Contract and Contract Bond are on file at the offices of the Richmond-Petersburg Turnpike Authority, 1015 East Main Street, Richmond, Va. and at the offices of the Engineers, Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, New York, where they may be inspected by prospective bidders during office hours.

Plans and Specifications (including Proposal Form, Proposal Bond Form, Contract and Contract Bond Form, Special Provisions and Turnpike Supplemental Specifications) may be purchased at the office of the Authority by registered prequalified contractors for $40.00 per set. Va. Dept. of Highways, Road and Bridge Specifications may be purchased for $1.00 per copy each. Cross sections, if desired, may be purchased for an additional $15.00 per set. No refund will be made for any of the above stated charges.

Proposal Guaranties consisting of either a certified or cashier's check in the amount of not less than 2½% of the total amount bid made payable to The Richmond-Petersburg Turnpike Authority together with a satisfactory Proposal Bond in an amount of not less than 20% of the total amount bid, specifying The Richmond-Petersburg Turnpike Authority as the Obligee must accompany each bid. All proposal guaranties will be returned immediately after the opening of bids except those of the three lowest bidders.

All work shall be done in accordance with the Plans and the Virginia Dept. of Highways, Road and Bridge Specifications dated April 1, 1954 as amended by The Turnpike Supplemental Specifications dated March 1956; both as amended by the Special Provisions.

The Authority reserves the right to reject any or all bids, submitted in response to this advertisement, and to waive technicalities as it may deem best for the interest of the Authority.

NOTE: Plans and Specifications will not be mailed prior to the receipt of payment of cost shown in this Advertisement.

The Richmond-Petersburg Turnpike
Authority
W. L. Daniel
Acting General Manager

Bids: August 28, 1956

The Richmond-Petersburg Turnpike Authority
Richmond, Va.

August 6, 1956

NOTICE IS HEREBY GIVEN that Sealed Bids will be received by The Richmond-Petersburg Turnpike Authority for:

CONTRACT NO. B-2-SUB, SECTION B

Construction of the Richmond-Petersburg Turnpike, Contract B-2-Sub, Section B, Substructure-North for the James River Bridge in the City of Richmond.

Bids for the above described work will be received at the office of The Richmond-Petersburg Turnpike Authority, 1015 East Main Street or by mail at P. O. Box 1-R, Richmond 2, Va., until 10:00 A.M. (EST) 11:00 A.M. (DST), Tuesday, August 28, 1956 and will be publicly opened and read aloud immediately thereafter in the Hunt Room of the Hotel Raleigh, 9th and Banks Streets, Richmond, Va.

Bids will be received only from those bidders who are registered in the State of Virginia and who are prequalified with The Richmond-Petersburg Turnpike Authority. Plans, Specifications, Proposal, and form of Proposal Bond, Contract and Contract Bond are on file at the offices of The Richmond-Petersburg Turnpike Authority, 1015 East Main Street, Richmond, Va. and at the offices of the Engineers, Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, New York, where they may be inspected by prospective bidders during office hours.

Plans, and Specifications (including Proposal Form, Proposal Bond Form, Contract and Contract Bond Form, Special Provisions and Turnpike Supplemental Specifications) may be purchased at the offices of the Authority by registered prequalified contractors for $25.00 per set. Va. Dept. of Highways, Road and Bridge Specifications may be purchased for $1.00 per copy each. No refund will be made for any of the above stated charges.

Proposal Guaranties consisting of either a certified or cashier's check in the amount of not less than 2½% of the total amount bid made payable to The Richmond-Petersburg Turnpike Authority together with a satisfactory Proposal Bond in an amount of not less than 20% of the total amount bid, specifying The Richmond-Petersburg Turnpike Authority as the Obligee must accompany each bid. All proposal guaranties will be returned immediately after the opening of bids except those of the three lowest bidders.

All work shall be done in accordance with the Plans and the Virginia Dept. of Highways, Road and Bridge Specifications dated April 1, 1954 as amended by The Turnpike

Supplemental Specifications dated March 1956; both as amended by the Special Provisions.

The Authority reserves the right to reject any or all bids, submitted in response to this advertisement, and to waive technicalities as it may deem best for the interest of the Authority.

NOTE: Plans and Specifications will not be mailed prior to the receipt of payment of cost shown in this Advertisement.

The Richmond-Petersburg Turnpike
Authority
W. L. Daniel
Acting General Manager

Bids: September 11, 1956

Contract PN-250.006

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
FIRE PUMPING STATION

Sealed proposals for the construction of a fire pumping station with a water storage tank therefor at Port Newark, N. J., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, September 11, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 10, 1956

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 602C-16) will be received at Huron, South Dakota, until September 6, 1956, for furnishing labor and materials for antenna towers, buildings, and underground power and communication lines for radio relay stations. Locations at 12 sites in South Dakota. Principal items are 870 cu. yds. earth excavation; 150 cu. yds. concrete; 16-200 foot steel towers; 16 prefabricated metal buildings; 7 engine-generator plants; 10,000 lineal feet buried electrical cables, and other work. Completion time 240 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; P. O. Box 825, Huron, South Dakota; or Building 53, Denver Federal Center, Denver 2, Colorado.

Read the Official

Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

OFFICIAL PROPOSALS

Bids: August 29, 1956

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A.M., Eastern Daylight Saving Time, the 29th day of August 1956, and immediately thereafter will be taken to the Public Utility Commisson's Hearing Room #3, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

Contract No. 543. This specification covers a combination of a Pigmented Binder and Glass Spheres for use as traffic lane markings on cement concrete and bituminous pavements in both white and yellow paint as shown on the plans.

The work shall begin at Station 1176+50, Lehigh County and continue to Station 660+00, Lackawanna County, including all interchange ramps and service station areas, but not including the work in and around the T. J. Evans Tunnel.

Copies of Plans and Contract Documents are on file and open to public inspection on 10 August 1956, at the office of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania. Plans and contract documents will not be available before this date for mailing to prospective bidders.

Plans and contract documents may be obtained from the Commission upon payment of ten ($10.00) dollars for each set. No refund will be made for contract documents returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpke Commission and must accompany requests for plans and contract documents.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The Pennsylvania Turnpike Commission reserves the right to waive any informalities in or to reject any or all bids.

PENNSYLVAIA TURNPIKE
COMMISSION
John F. Byrne
Secretary and Treasurer
Harrisburg, Pennsylvania
6 August 1956

Bids: August 28, 1956

Power Authority of the State of New York

ST. LAWRENCE POWER PROJECT
ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY OF
CARRIER CURRENT EQUIPMENT
SPECIFICATIONS NO. PA-5-14026
ST. LAWRENCE CONTRACT NO. P40

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the design, manufacture and furnishing of carrier current equipment and appurtenances and delivery thereof, f. o. b. cars at destinations, in the following ways:

(1) If brought in person on the day of receiving bids until 10:30 A.M. Eastern Daylight Savings Time, on the 28th day of August, 1956, Hearing Room C, on the 6th floor, 270 Broadway, New York, New York.

(2) If mailed in until 10:15 A.M. Eastern Daylight Saving Time on the 28th day of August, 1956, at the Authority's office, 270 Broadway, Room 1300, New York 7, New York.

The proposals will be publicly opened and read aloud at the time and at the address given in (1) above. Bids will be entertained for the carrier current equipment and appurtenances in accordance with the bidding schedule. Installation will be done by Others but services of erecting engineers shall be provided by the manufacturer if and when required. Delivery of the carrier current equipment and appurtenances will be required January 1, 1958.

Specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Ten ($10.00) Dollars for initial set of contract documents and Five ($5.00) Dollars per set for each additional set, no part of which will be refunded. Two sets must be returned with each bid.

Bids must be made in duplicate upon the proposal forms included in and bound with the Contract Documents. Bid deposit will be required with each bid in the amount not less than 10% of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
PA-5-14026 GENERAL MANAGER

Bids: August 28, 1956

Contract LGA-300.001

THE PORT OF NEW YORK AUTHORITY
La GUARDIA AIRPORT
SECOND STAGE
DEMOLITION OF VACANT STRUCTURES

Sealed proposals for the second stage of demolition of houses and other structures in the vicinity of La Guardia Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Ave., New York 11, N. Y., until 2:30 P.M. on Tuesday, August 28, 1956 at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115 and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the openng of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, August 16, 1956

U. S. Government

GOVT. OF DIST. OF COL., DEPT. OF SAN'Y. ENGG., July 26, 1956. SEALED PROPOSALS will be recd. in Rm. 404, 499 Pa. Ave., N.W., Wash. 1, D.C., until 2 PM, EDT, Sept. 19, 1956, and then publicly opened and read for constr. of Section No. 4 of E. Branch Piney Br. Trunk Sewer in Kansas Ave. and 5th St. from Varnum St. to Ingraham St., N.W., consist. of 1,555 lin. ft. 14' 6", 2,370 lin. ft. 14' 0", and 825 lin. ft. 3' 6" to 10' 6" dia. brick and reinf. concr. masonry sewer (IN TUNNEL); and 395 lin. ft. 12" to 5' 6" dia. brick and reinf. concr. masonry sewer and 165 lin. ft. 12" dia. cast iron watermain (IN OPEN CUT). Proposal forms, plans and specns. obtainable from Supervisor, Contr. & Bond Section, Procurement Office, D. C., Rm. 406, 499 Penn. Ave., N.W., upon deposit of a certified check for $5.00 per set, payable to Collector of Taxes, D. C. (Tel. NA 8-6000, Ext. 2378).

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4744) will be received at Winters, California, until August 29, 1956, for furnishing labor and materials for Earthwork and Footing Modification for Sacramento River Crossing, Tower 2-C, 230-Kilovolt Shasta-Tracy Transmission Lines 1 and 2 (West side lines), Central Valley Project, California. Location near Rio Vista, California. Principal items are 146,000 cu. yds. excavation; concrete work for underpinning the tower footings; 2,400 sq. yds. plant-mix bituminous surfacing; and other work. Completion time 240 days. For particulars, address Bureau of Reclamation, P. O. Box 546, Winters, California, or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4747) will be received at Kanab, Utah, until September 11, 1956, for furnishing labor and materials for Glen Canyon Dam Right Diversion Tunnel, Middle River Division, Colorado River Storage Project, Arizona-Utah. Location on Colorado River, near Lees Ferry, Arizona. Principal items are 168,000 cu. yds. excavation in open cut at tunnel portals, 168,000 cu. yds. excavation in tunnel; furnishing and placing 500,000 lbs. of permanent structural-steel supports; and other work. Completion time 150 days. For particulars, address Bureau of Reclamation, P. O. Box 267, Kanab, Utah, or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4746) will be received at Kanab, Utah, until September 6, 1956, for furnishing labor and materials for Waterholes Canyon Bridge for Access Highway, Glen Canyon Dam, Colorado River Storage Project, Arizona-Utah. Location in the Navajo Indian Reservation, Coconino County, Arizona. Principal items are 400 cu. yds. excavation; 610 cu. yds. concrete; and other work. Completion time 240 days. For particulars, address Bureau of Reclamation, P. O. Box 267, Kanab, Utah, or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4745) will be received at Denver, Colorado, until September 18, 1956, for furnishing one 12-inch floating, cutterhead type, hydraulic suction dredge with floating and land discharge pipe line for Lower Colorado River, Colorado River Front Work and Levee System, Arizona-California-Nevada. Delivery is desired within 270 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

(Continued on pages 144-158)

REPLIES (Box No.): Address to office nearest you
c/o This publication Classified Adv. Div.
New York: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Assistant Professor—To teach undergrad courses in structures and applied mech. Salary depends on qualifications of Civil Eng., Univ. of No. Dakota, Grand Forks, N. Dak.

Engineers for municipal and industrial water supply, sewerage and treatment projects. Opportunities for permanent connection with long established firm of consulting engineers in mid-west. Both E.I.T.'S and engineers considered. Full information and references in first letter requested. P-2316, Engineering News-Record.

Wanted: Civil Engineers for permanent work on bridges in both design and field offices of established consulting engineer. Please send education and experience resume, references, and salary requirement. P-2368, Engineering News-Record.

Associate Professor of Civil Engineering—BS & MS in Civil Engineering to teach engineering mechanics, surveying, highway & reinforced concrete. Salary $5,400 for nine months. Location—Texas. P-2297, Engineering News-Record.

Construction engineer with college degree in engineering or equivalent, practical experience in light construction (shopping centers, motor hotels). Job consists of estimating, purchasing and general supervision of construction. Excellent and permanent opportunity. Give age, experience, salary desired and references. P-2465, Engineering News-Record.

Wanted — Heavy and highway construction superintendent, capable of running large grading, drainage and bridge work. State experience, age and educational background. P-2473, Engineering News-Record.

Salesman Rockland County, N. Y., road building materials and construction. Old established business requires able young man with car. Experience preferable but not required. Interest in bituminous pavement construction essential. Salary plus expenses. Write Box 120, Haverstraw, New York.

Young Man — (25-40) — Civil Engineer for bituminous road work—costs, etc. Car furnished; steady employment and advancement, wages commensurate with ability. Write Box 120, Haverstraw, N. Y.

Instrument men, party chiefs, asphalt & soil Inspectors, Lab. Tech.—O'seas airbase, mild climate. Call or write Mr. Lambert, Patchen & Zimmerman, 120 Greenwich St., NYC RE 2-1187.

(Continued on the following page)

EMPLOYMENT OPPORTUNITIES

—RATES—

DISPLAYED

The advertising rate is $28.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

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UNDISPLAYED

$2.10 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take 1/2 of above rate.

Box Numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD
P. O. Box 12 N. Y. 36, N. Y.

PURCHASING AGENT

Large construction company specializing in heavy and industrial construction has opening in its home office, Norfolk, Virginia, for a Purchasing Agent thoroughly experienced in its particular field. Permanent position, good salary, retirement program and other employee benefits. The man selected must have initiative and good personality—college education preferred. Write fully, your first letter concerning personal data, experience, etc., including recent photograph if available.

TIDEWATER CONSTRUCTION CORPORATION
P. O. Box 57, Norfolk 1, Virginia

ENGINEERS
DESIGNERS
DRAFTSMEN

BRIDGES
HIGHWAYS
INDUSTRIAL

Please submit complete resume giving education, experience, salary desired, and date of availability.

R. W. BOOKER & ASSOCIATES
Consulting Engineers
1722 Olive St., St. Louis 3, Mo.

Designers and Draftsmen

STRUCTURAL

Experienced at schools, apartment buildings, commercial structures, etc. Salaries high commensurate with experience. Send resume including education, experience and availability in application letter to

Frank L. Ehasz, Consulting Engineer
40-29 27 STREET
LONG ISLAND CITY 1, N. Y.

ENGINEERS

Long established firm of consulting engineers with world-wide practice needs both beginners and experienced civil, electrical, mechanical, and foundation engineers for interesting work on large dams, powerplants, and river control works. Permanent positions. Liberal employee benefits. Starting salaries dependent on qualifications. Please send complete resume to Hugo Niemi, Personnel Manager.

HARZA ENGINEERING CO.
400 W. Madison St. Chicago 6, Ill.

BRIDGE ENGINEERS

Field Engineers, Designers and Draftsmen. Pleasant working conditions. Interesting projects. Qualified graduates may apply in person or write fully stating education and experience.

D. B. STEINMAN, *Consulting Engineer*
117 Liberty St. New York 6, N. Y.

POSITIONS VACANT

(Continued from preceding page)

Designers—Steel, Concrete, Electrical Piping, Air-Cond., Power Plants & Industrial Bldgs. Marbarry Corp., 120 Greenwich St., N.Y.C. Rector 2-3749.

Gen'l Superintendent qualified engineer for North Jersey contractor, must have proven experience on industrial buildings & gov't. projects. Salary open. P-2608, Engineering News-Record.

Wanted—Young man, age 23 to 35, with water works experience to work for growing private water utility in active Illinois city. Excellent opportunity as assistant to manager. Salary open. Please submit complete resume stating education, age, experience, salary desired and date of availability. P-2609, Engineering News-Record.

Structural Engineer, experienced designer reinforced concrete and steel. Permanent position with established firm. Write complete details, education, experience, salary expected to H. J. Ross Associates, 3047 Biscayne Blvd., Miami, Fla.

Designers-Detailers—Well established consultant located in New York State has permanent openings for designers and detailers experienced in structural steel and reinforced concrete structures for highways. Send resume to P-2572, Engineering News-Record.

Supervisory positions for High Dam Construction in India. Former Supervisory employees or those now in supervisory positions who have worked with me on projects in the past and are interested in foreign work. Contact me by letter: M. H. Slocum, 504 East Pine Street, Alhambra, California.

Wanted—Project Manager with extensive experience in the supervision and management of large scale concrete paving operations. Permanent position with rapidly growing organization. State experience, age, salary, availability and references. Reply P-2622, Engineering News-Record.

Hydro Superintendent for 35,000 KW plant in central California. Some technical training desirable. Excellent housing, complete benefit plan. Send qualifications to P-2634, Engineering News-Record.

WEST COAST
Prestressed Concrete Manufacturer

Desires engineers, 25-40, for design, estimating and sales of prestressed concrete. Also openings for engineers or experienced production men in prestressing plant. Vacancies in San Francisco, or Los Angeles-Long Beach office and plant to be established shortly. Wonderful opportunity with leading established company in a rapidly expanding field. Salary commensurate with experience. Write giving background and experience. All replies confidential.

BEN C. GERWICK, INC.
112 Market Street, San Francisco, California

POSITIONS VACANT

Structural Engineers for building design work. Consulting Engineers Office. Write training, experience and salary. Saul Shaw & Co., 24 Commerce St., Newark, N. J.

Civil Engineers. Long established consulting engineer, eastern United States, has openings for graduate engineers with experience in either highway and bridge design or field and laboratory experienec in soil mechanics. Positions permanent. Liberal employee beenfits. Salaries open. Send resume to P-2627, Engineering News-Record.

Electrical Superintendent to supervise heavy industrial electrical construction. Salary $200.00 per week and up depending on qualifications. P-2640, Engineering News-Record.

Executive Engineer with E.E. or M.E. degree to take charge of mechanical and electrical departments of large national contractor. Salary $12,000.00 per year and up depending on qualifications. P-2644, Engineering News-Record.

Mechanical Engineer recent graduate to work in Engineering Office of medium sized chemical company, to work on plant layout, design of buildings and equipment. The Glens Falls area of about 30,000 population is ideally located near Lake George and other vacation areas. Progressive community with good schools and living conditions. Write Personnel Department, Imperial Paper and Color Corporation, Glens Falls, New York.

Traffic Engineer—starting salary $6723. B.S.C.E. Two years highway engineering experience including some experience in traffic engineering. Apply to Wayne County Civil Service Commission, 628 City-County Bldg., Detroit 26, Michigan.

Structural Engineer—graduate C.E. with 10 years experience in the design of industrial buildings, and knowledge of the latest construction methods and materials and their relative costs. Capable of supervising and coordinating the activities of designers and draftsmen, preparing estimates and specifications. Some field experience and Professional Registration desirable. A responsible engineering staff position with a Philadelphia organization internationally known in diversified fields of engineerng and construction; of optimum size to permit individual technical growth and development. P-2683, Engineering News-Record.

Structural Engineer or C.E. graduate, to assist chief engineer in charge of design, detail, fabrication and erection of structural steel. Knowledge of drawing room and structural fabricating shop practice required. Salary open. Submit complete resume and photo to Southern Iron Works, Inc., P.O. Box 430, Alexandria, Va.

(Continued on page 148)

STRUCTURAL and MECHANICAL DESIGNERS

Having experience with heavy material handling equipment

Permanent Position For Qualified Men

HOSPITALIZATION
INSURANCE
VACATION

Phone or Write Chief Engineer for interview

THE WELLMAN ENGINEERING CO.

7000 CENTRAL AVE.
Cleveland 4, Ohio
Telephone EN 1-0842

HIGHWAY ENGINEERS DESIGNERS DRAFTSMEN

Drainage Engineers

FOR OFFICE WORK IN ST. LOUIS ON HIGHWAYS EXPRESSWAYS AND ASSOCIATED CIVIL WORKS

- *Permanent employment for qualified men*
- *Ample opportunity for advancement based on merit*
- *Generous transportation & moving allowances*

Plus: Employee Benefit and Retirement Plan, Paid Vacations, Holidays, Sick Leave. Blue Cross available.

PLEASE WRITE FULLY TO OR INQUIRE AT

SVERDRUP & PARCEL ENGINEERING CO.

1134 LOCUST ST. ST. LOUIS 1, MO.

CONSTRUCTION EQUIPMENT SALES ENGINEER

Off highway haulage equipment department. Opportunity for sales engineer or construction man 30 to 35 years of age in established territory for AAA-1 construction distributor. *Give full details of background and experience in first letter to*

P. O. Box 1705 Louisville, Ky.

Engineers Architects

Highway Designers—Draftsmen
Rochester & Harrisburg, Pa.

Bridge Designers—Draftsmen
Harrisburg, Pa. College Park, Md. Ft. Lauderdale, Fla.

Architectural Designers—Draftsmen
Rochester, Pa.

Civil Engineering Draftsmen

Ink Tracers—Computors
Rochester, Pa.

Air Mail Resume TO R. L. SHAW, *Personnel Director*

MICHAEL BAKER, Jr., Inc.

BAKER BLDG. *Consulting Engineers* ROCHESTER, PA.

MATERIALS ENGINEER

Mature man with minimum of 15 years experience in concrete and materials control required by consulting engineer for toll highway construction near Chicago. Top salary, excellent working conditions.

Send resume to

Jospeh K. Knoerle & Associates, Inc.
155 N. Wacker Drive
Chicago 6, Ill.

Key positions open for experienced Engineers to be in responsible charge of induividual projects with excellent opportunities for advancement.

Civil or Sanitary Engineer to Design Sewage Treatment Plants and Sewage Works.

Structural Designers experienced in Concrete and Steel Design of Sewage Treatment and Water Treatment Plants.

Soils Engineer experienced in Slip Circle Analysis Method for Design of Earth Embankment Dams.

Traffic Engineer experienced in O and D and Parking Surveys and Analysis of Data.

Also key positions for:

Hydraulic Engineer experienced in Earth and Concrete Dam Design.
Civil or Sanitary Engineer as Principal Assistant in Design.

Ideal living conditions. Vacations and sick leave, Bonus, Insurance and Retirement Benefits.

Send complete resume to—Mr. HARVEY B. SMITH
Gannett, Fleming, Corddry & Carpenter, Inc., P. O. Box 366, Harrisburg, Pennsylvania

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WANTED

ASPHALT FOREMAN OR SUPERINTENDENT

Take complete charge asphalt paving contract, Ohio specifications. Located Cleveland. Ohio experience and references required.

TESTA BROS. INC.
RICHMOND ROAD BEDFORD, OHIO

WANTED:

Experienced Licensed Civil Engineer, with at least five (5) years Penna Highway experience. Immediate employment. Long Highway program with reliable contractor. Location Eastern and Central Penna.

P-2588, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

BUILDING CONSTRUCTION Executive

To Head All Field Activities of Important Eastern Company Engaged In Large Building Projects.

Actual experience in main office direction of multi-million dollar building construction projects essential. Must be profit-conscious and able to control costs and progress of widely located projects. The ability to work effectively in close cooperation with owners, architects and construction personnel extremely important. Should be graduate engineer preferably with degree in Civil or Architectural Engineering. Attractive salary commensurate with age and experience.

Send complete resume to: **P-2670** Classified Advertising, PO Box 12 New York 36, N. Y. ←

CIVIL and STRUCTURAL

ENGINEERS
DESIGNERS
DRAFTSMEN

Permanent positions for qualified personnel experienced in civil, soils, drainage, railway, highway and structural engineering for work on:

BRIDGES and BUILDINGS
HYDROELECTRIC PROJECTS
INDUSTRIAL FACILITIES
AERONAUTICAL TEST FACILITIES
FLOOD PROJECTS

Openings available in our St. Louis and San Francisco offices.

Please furnish full particulars in regard to education, experience and salary history, salary requirement, and date available.

SVERDRUP & PARCEL, INC.
Engineers—Architects
915 Olive Street St. Louis 1, Mo.

DIRECTOR of PUBLIC WORKS

For Wakefield, Mass.

The Board of Public Works, Town of Wakefield, Massachusetts, will receive applications for the position of Director of Public Works until August 27, 1956.

Applicant must be experienced in municipal engineering and public works administration. All applications should include a resume of education, previous experience and other qualifications.

Apply to:

BOARD OF PUBLIC WORKS
Lafayette Building
Wakefield, Massachusetts

CIVIL ENGINEERS

Foreign Employment

To assist in the collection of data, preparation of engineering designs, plans, studies, reports on highways, sewers, sewage disposal systems, utilities and the material used in constructing and maintaining these facilities located in Saudi Arabia.

Must be graduate civil engineer with minimum 5 years' well-rounded engineering experience. Liberal salary plus allowances and generous benefits.

Write outlining personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 178

ARABIAN AMERICAN
OIL COMPANY
505 PARK AVENUE
NEW YORK 22, NEW YORK

ENGINEERS

Highway Design · Traffic Engineers
Architects · Structural Engineers

Recent graduates and experienced design engineers needed.

Company paid hospitalization, life insurance, retirement and holidays. 40-hour week. Send complete experience and education resume with salary requirements to:

Palmer & Baker Inc.
P. O. Box 346
Mobile, Alabama

RESIDENT ENGINEER AND DEPUTY RESIDENT ENGINEER

To supervise construction of $40,000,000 rockfill dam in the Middle East. Four-year completion schedule. Please send detailed experience and personal record. Specify salary expected and earliest date available.

HARZA ENGINEERING COMPANY
400 W. Madison St. Chicago 6, Ill.

WANTED

MECHANIC CONSTRUCTION EQUIPMENT

DIESELS, TRACTORS, ETC.

Must Have Tools, Experience and References.

P-2664, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

MECHANICAL ENGINEER

Wanted by a large and progressive Canadian Corporation. Top-flight man, preferably with experience in the design of stone crushing and processing plants, asphalt plants, concrete plants, cement plants and conveying equipment, etc.

Must be creative and capable of producing finished designs through his own initiative and efforts that can be detailed by staff.

Interested party should forward complete resume of experience and all vital statistics, including salary required.
If applicant does not desire to disclose identity until interviewed and final negotiations are in effect, blind applications or third party submissions will be satisfactory. All information given will be held in confidence.

P-2661, Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

ENGINEERS

Are you worth up to

$10,000 A YEAR?

Important permanent positions, paying from $6,500 to $10,000 a year with unusual future opportunity, have been created by the expansion program of our large, long-established engineering and construction firm. We need qualified engineers, designers and draftsmen experienced in structural, concrete, mechanical and piping design. Engineering offices are in several major American cities and Canada. Excellent working conditions. Generous company benefits. Our employees know of this ad.

Investigate this opportunity. Write today, giving age, education and experience. Your inquiry will be kept strictly confidential and will be answered promptly.

P-2652, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SOUTH AMERICAN POSITIONS

ASSISTANT GENERAL MILL FOREMEN
MASTER MECHANIC for Smelter Operations
ASSISTANT MINE FOREMEN for underground mine operations. Salary $450.00/month.
DIAMOND DRILL FOREMEN for development/exploration. Salary $550.00/month.
FIELD ENGINEER for design drafting in connection with Smelter maintenance and repairs, camp buildings, water line, etc. Salary $600-650 month.
INDUSTRIAL ENGINEER at least five years experience in production control, time study, wage incentive, job evaluation, etc. Salary $9,000/yr.
FIELD ELECTRICAL ENGINEER to supervise work done by District Electrical Foremen in various Company owned villages, Mine, Concentrator, Smelter and miscellaneous jobs, which include all electrical equipment used in the Plant with its auxiliary services and covers power distribution and utilization. Salary $750.00 month.
SUPERINTENDENT, Construction and Maintenance Department registered professional engineer with considerable U. S. Construction experience, capable of supervising all major construction, repairs and maintenance of housing and commercial structures in several camps. Salary $12,000 per year.

Large Copper Company, Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by company. Good opportunities. In reply give complete details.

P-2671, Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

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permanent openings in Architects Office available for qualified personnel experienced in—

- **a. Structural Steel Design—**
  3 to 5 years experience
- **b. Architectural Draftsman and Designers—**
  3 to 5 years experience

Benefits: Group Insurance; Profit Sharing; Paid Vacation.

P-2667, Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

ENGINEERS
2 to 5 Years' Experience

1
Industrial steel and reinforced concrete design.

2
Furnace and pressure vessel equipment design.

Responsible positions with a long-range future are immediately available. Recognizing the need for the professional growth of the individual engineer, Kellogg provides a variety of stimulating assignments and encourages membership in engineering societies and associations. As a result, the company has grown steadily for 55 years to become a world-wide leader in the petroleum and chemical plant field. The most modern facilities are available in a brand new air-conditioned building, centrally located convenient to transportation serving suburban residential areas.

Please send resumes, including salary requirements, to R. L. Stacom. All inquiries in confidence.

M. W. KELLOGG CO.
711 Third Ave. New York 17, N. Y.

SOUTH DAKOTA DEPARTMENT OF HIGHWAYS

ENGINEERING OPPORTUNITIES

Openings on the South Dakota Department of Highways staff present permanent opportunities for recent Civil Engineering graduates and experienced engineers in the following classifications and salary brackets:

Structural Designer	$6240-7020
Structural Draftsman	5420-6240
Civil Engineers (Highway—Survey—Design—Construction Drafting)	4800-7020

Benefits include sick leave with pay, paid vacations, military leave with pay, available hospitalization plan.

For application forms, contact:

C. V. DOODY, *Personnel Director*
Department of Highways
Pierre, South Dakota

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- PERMANENT EMPLOYMENT
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- IDEAL WORKING CONDITIONS
- AIR-CONDITIONED OFFICES
- MANY OTHER BENEFITS

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with Engineering Offices in
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Graduate Electrical, Mechanical, Civil or Chemical Engineers with minimum 10 years' experience supervising construction of industrial buildings, oil processing and oil handling facilities. Engineering degree essential. To assist in constructing expanding company facilities of major foreign operating oil company located in Saudi Arabia. Generous salary plus living allowance: liberal all-inclusive benefit program.

Write giving full particulars regarding personal history and work experience.

Recruiting Supervisor, Box 146

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- Estimators
- Sr. Engineers
- Sr. Draftsmen
- Piping Draftsmen

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- Electrical
- Structural
- Mechanical

TYPE OF DESIGN:
- Chemical Plants
- Industrial
- Steam Power Plants
- Petroleum Refineries
- Hydro-Electric Projects
- Electrical Sub-Stations

Engineers, Designers, and Draftsmen having qualifying experience in one or more of the above fields, please submit complete resume listing education, experience, salary history, present salary requirement, and availability date to:

5 West 45th St., New York 36, N. Y.
220 Bush St., San Francisco 4, Calif.

Confidential interview can also be obtained at: Scanlon Building, Houston, Texas, or Roosevelt Building, Los Angeles, Calif.

A leader in Industrial Design

BECHTEL
Engineers — Constructors

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Top level mature man wanted. Should have as a minimum, for the last 10 years, been continuously employed as superintendent on foundations, heavy concrete work, bridges, treatment plants, industrial construction and similar work. Permanent position, congenial working conditions and commensurate salary. Also need younger man with corresponding qualifications as assistant to our general superintendent.

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2626 West 26th St.
Chicago 8, Ill.

EMPLOYMENT OPPORTUNITIES

POSITIONS VACANT

(Continued from page 111)

Soils Engineer—wanted by large engineering and construction organization for work on large hydro-electric development. Position also available in New York office. Please send complete resume to: P-2602, Engineering News-Record.

Senior Cost Engineer familiar with the Uniform System of Accounts for electric utilities. Duties will consist of analyzing completed major construction projects for an Electric Utility. Experience with the Federal Power Commission or a State Public Service Commission would be desirable. Some experience with the Property Record Department of any Electric Utility would also be an asset. Indianapolis Power and Light Company. Employment Department, 1230 West Morris St., Indianapolis, Indiana.

EMPLOYMENT AGENCIES

Wanted Engineers, Designers, Draftsmen-Structural, Architectural, M.E., C.E., E.E., and Ind. also Teachers and Chemists. Cleveland Engineering Agency, 2132 E. 9, Cleveland.

POSITIONS WANTED

Civil Engineer, (soils, concrete), BSCE, 28, experience in construction engineering, supervision and control of earthwork and concrete. Desires permanent position. PW-2508, Engineering News-Record.

Civil Engineer age 39 with 18 years experience in heavy construction and municipal work, desires to establish permanent location in municipal or other work on completion of present construction job as resident engineer. Good record, excellent references. Available Sept. PW-2487, Engineering News- Record.

Registered Civil Engineer and Land Surveyor, age 31, extensive experience in highway design, specializing in drainage and hydraulics. Now employed in Central America. Present salary $16,800. Scheduled for re-assignment to the U. S. but wishes to continue foreign work. Good reading and speaking knowledge of Spanish. PW-2525, Engineering News-Record.

Sales Engineer, BSCE, under 30. Background in heavy construction. Wishes to join growing construction equipment or materials company. PW-2504, Engineering News-Record.

Hydraulic Engineer 33, M.S.C.E. Reg. Calif. Diversified exper., desires challenging change. Min. salary, $10,000. West Coast location preferred. PW-2573, Engineering News-Record.

Construction Manager. Industrial constr. Civil Engr., job-planning, cost-control, estimating & management specialist. Now situated Phoenix. Confidential replies. Reply PW-2527, Engineering News-Record.

Construction superintendent over 20 yrs. experience extensive industrial, commercial and finished projects. Engineer. Anywhere. Salary fitting. PW-2436, Engineering News Record.

Distr. Factory Rep., 37, College Grad., 8 yrs. experience shovel, scraper, other heavy equip. Desire Western location. References and resume furnished. Reply PW-2574, Engineering News-Record.

Construction Executive—Grad. Eng. under 40, seeks a top position. Accustomed to assuming responsibility as head of heavy construction company (medium size work) and earning in excess of $25,000. PW-2610, Engineering News-Record.

Construction Management—BSCE, 36, excellent experience in heavy construction including field supervision, estimating, bidding and management of concrete structures, earthworks and powerplants, interested in connection with moderate size contractor with growth possibilities in Rocky Mtn. or Southwest. Can consider participation arrangement. PW-2515, Engineering News-Record.

Construction Executive: Fully qualified. Seventeen years in all phases of commercial and industrial construction. Estimating to completion, contract negotiation, project management. Age 40. Domestic or foreign. Seek new permanent connection with possible future advancement. Minimum $14,000. PW-2360, Engineering News-Record.

Specifications — Does the boss write the specs in your organization? If so let me take away that headache. Long consulting experience in many fields of engineering. PW-2646 Engineering News-Record.

Registered Professional Engineer with 15 years experience on bridges, highways, dams, buildings etc. seeks responsible position with medium size contractor in Middle Atlantic states who is expanding. PW-2693, Engineering News-Record.

POSITIONS WANTED

Superintendent—Bridges, heavy foundations, sub-aqueous installations. Twenty-five years experience. To the construction organization confronted with the need of an experienced superintendent for the duration of a single project, your inquiry is solicited. Prefer to initiate job but will assume direction of going project, having successfully completed a number of projects started by others. A brief description of your project sent with your request for resume of experience, references and salary would be expeditious. PW-2562, Engineering News-Record.

Construction Supt. or Assit. available. PW-2563, Engineering News-Record.

Estimator—Civil Engineer age, 32. Experience includes job engineer, design, purchasing and supt. Available for responsible position in any location. PW-2589, Engineering News-Record.

Civil Engineer, 2-5 yrs. exp. pref. subdivision engrg. and surveying, to manage small consulting office suburban N.J. Excellent opportunity. PW-2591, Engineering News-Record.

Master Mechanic heavy duty equipment asphalt plant, sand and gravel and quarry erection and operation. Asphalt paving and road building. 14 years experience. PW-2694, Engineering News-Record.

Cost Control Program MGNT. consultant to contracting field, substantial dollar savings, 2-3 weeks to install project, weekly reports of cost progress. PW-2676, Engineering News-Record.

Construction Engineer—Superintendent—30 Graduate licensed C.E. 7 years construction experience.—Field & Office—Heavy & Industrial. Interested in responsible position with future. Especially interested in position including some estimating. Salary bracket $7500. PW-2618, Engineering News-Record.

POSITIONS WANTED

Chief Estimator or Project Manager, 38 BS&PE, thoroughly experienced in industrial, commercial and monumental construction. Location immaterial. Presently employed at $10,000 plus bonus. Reply PW-2592, Engineering News- Record.

Structural Engineer, registered, MS degree, nine years experience miscellaneous types building design in consulting offices. Desires responsible position in architectural office or consulting office with architectural clients. Preferred location Southern Coastal Area or Southwest. PW-2679, Engineering News-Record.

Construction Manager—Grad. C.E. 15 yrs. responsible contracting & engr.'g experience in bldg. constr. incl. estimating, contract negot'n, field supervision, new business, archt.-owner & govt. relations, wishes to locate in Wyo., Idaho, Nev., Ark. PW-2684, Engineering News-Record.

Engineer (MME) seeks position Europe. Experienced in field supervision, process piping, gas turbines, stress analysis. PW-2630, Engineering News-Record.

Field Engineer 29 B.S. 4 yrs. heavy construction, 1 yr. structural design. Interested in sales engineering. Midwest or West. PW-2635, Engineering News-Record.

Civil Engineering Draftsman. Over 30 years experience municipal public works. Lic. Surveyor N.Y.S. Now employed. PW-2619, Engineering News-Record.

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SEARCHLIGHT SECTION

(Classified Advertising)

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Learn latest methods to organize and run work. Prepare for the top jobs.

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315' Jaeger Diesel	(4) wheels	
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Air Compressors—2 Le Roi 105 Pneumatractors and 2 Schramm Tractors 105

Wagon Drills—6 Worthingtons (CM40) and 7 Ingersoll Rands (FM3)

Bulldozers—4 OC18 Olivers, 2 HD10 AC, 5 HD15 AC and 1 HD14

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Hydro Hammers—3 Ottawa SPHH and MPT

Pavers—Asphalt Barber Greene (1 job only) like new

Ditchers—Trencher—1 Barber Greene 44C and 1 Cleveland 140A

Concrete Machinery and Equipment—2 Con Cut Jr. Cutters 7.5 h.p., 1 27E Foote Paver, 1 34E Ransome Paver, 2 Finishers, 1 Blaw Knox XC 211 and 1 Long Koehring LJ 828, Cement Bins and 10" Road Forms, 1 Jaeger Spreader

Sweepers—Austin Western Patrol P 722, 1 Grace Broom and 1 Littleford

Scrapers—6 Heiliners 20'800, 2 La Plante Choate 8200

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Wagons—3 DW10 Cat/Bottom Dumps

ALL EQUIPMENT GUARANTEED

MANY OTHERS—CALL, WRITE, VISIT

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FS-2666, Engineering News-Record
Class Adv Div P O Box 12, N.Y. 36, N.Y.

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Vibro Tamper Model VT 6-4 gasoline powered with 6 vibrating shoes 25" x 20", adjustable to 12' 6" width, new 1955, excellent condition.

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$21,000.00

Worked only 500 hours.
Bought for a job that "blew up"
H&L removable teeth, Reinforced Boom—Conveyor extension—Diesel. You can't tell from new machine

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1—25 Ton Bay City Truck Crane, 95' Boom, New 1952.

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Girard Trust Bldg. Philadelphia 2, Pa.

FOR SALE

Model 6 Caterpillar Front End Loader — Serial 10A39 — Control Shovel Front 3 H 1600 — 1953
Shovel Front for Northwest Model 6
Lorain 80 Crane — 19739 — 70' Boom

PRICED TO SELL
— All in Excellent Condition —

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PENKER CONSTRUCTION CO
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SEARCHLIGHT SECTION

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Editorials

Right Man Needed

It is difficult at this time to evaluate fully the change in the administration of the Bureau of Public Roads that was authorized by Congress in a last-minute action creating a new top position of Federal Highway Administrator within the Department of Commerce. But this much is certain: That plan is better than a parallel proposal to transfer the Bureau of Public Roads to an independent, three-man Federal Highway Commission charged with administering the big new highway program. Such a radical change would surely have caused endless confusion that would greatly delay expansion of the nation's road building operations. Like confusion and delay can, of course, be caused by a poor—or political—administrator, so that it is imperative that the new top man be chosen with care.

The new Federal Highway Administrator is to be appointed by the President and is to have the pay of an Assistant Secretary. Hence, presumably, his rank would be higher than that heretofore accorded to the Commissioner of Public Roads. The commissioner is to be continued, at higher pay. He is to perform "such duties as may be prescribed by the Federal Highway Administrator."

In view of the magnitude of the new road program there may be much to be gained by having an administrator who will be free of the routine duties that heretofore have been handled by the Commissioner of Public Roads (ENR Aug. 9, p. 22). Since the proposal to set up an administrator originated with Secretary of Commerce Weeks, it may well be that his recommendation to Congress was based on the experience gained in 1954 when Francis V. du Pont was relieved of his responsibilities as Commissioner of Public Roads and given the special assignment of following the progress of legislation designed to put the President's "Grand Plan for Highways" into effect. An administrator with a free foot who could meet easily with state highway commissions, Congressional groups and other government agencies ought to be able to do much toward quick solution of the many problems that are certain to arise as the roadbuilding program expands.

On the other hand, the setting up of an administrator who outranks the Commissioner of Public Roads could alter the whole relationship between the Bureau of Public Roads and the state highway departments. In the past, the commissioner's decisions were final. Now, presumably, appeals can be taken to the administrator. Evidently the Senate Public Works Committee was well aware of this situation when it reported favorably on the bill (S. 4164) setting up the new position of administrator. At that time it said: "It is thought that the matter of thorough reorganization should be studied further and that approval of S. 4164 at this time would in no way prejudice consideration of reorganization matters at a later time." Such a study might result in major changes in the administration of the whole federal-aid program. This is a further reason to make certain that the administrator who is appointed now be a man of the highest qualifications and eminently knowledgeable in highway matters.

The Challenge from Labor

Out of California have come further examples of the increasing complexity of collective bargaining, and the serious challenge it presents to contractors in their efforts to maintain equality of bargaining power.

There was nothing new in the concept, raised by plumbers in the San Francisco area, of an employer contribution for employee savings accounts for use during unemployment, nor in the vacation and pension fund demands pushed by the carpenters. Yet, both issues became strikebound and helped to split the ranks of participating contractors. When some of the employer groups made separate agreements—on a 52½¢ package over a three year period—the others had to follow suit, even though it threatened losses on existing long-term contracts to which they were committed.

Permitting collective bargaining to break down into a strike, which then must be settled in a pressure-charged atmosphere, is not the way to achieve sound and constructive labor contracts.

The handwriting has been on the wall for a long time. Organized labor, including the building trades, has been frank about its basic enonomic goal—a "fair share" of what it produces—and it has repeatedly illustrated its growing interest in regularity and security of income. Our industrial and economic progress—and human nature itself—make the trend inevitable and unrelenting, and one now taking deep root in the AFL-CIO merger. At the same time, the construction industry is slowly losing the isolation from union pressures its once peculiar nature afforded.

Thus grows more serious the challenge for unity and leadership and constructive thought on the part of management—not with the object of throwing an immovable object into the path of an irresistable force, but with the hope of building up on the part of both management and labor a better understanding of their mutual problems, and of how they should be solved to serve the welfare of all.

For it is only through equality of bargaining power, in this broad sense of knowledge and understanding, that one can even roughly gage what forms the realization of labor's hopes should take, what demands are "excessive", what resistance is "unreasonable". It's a big task and a continuing one that can't be left until contract expiration dates arrive.

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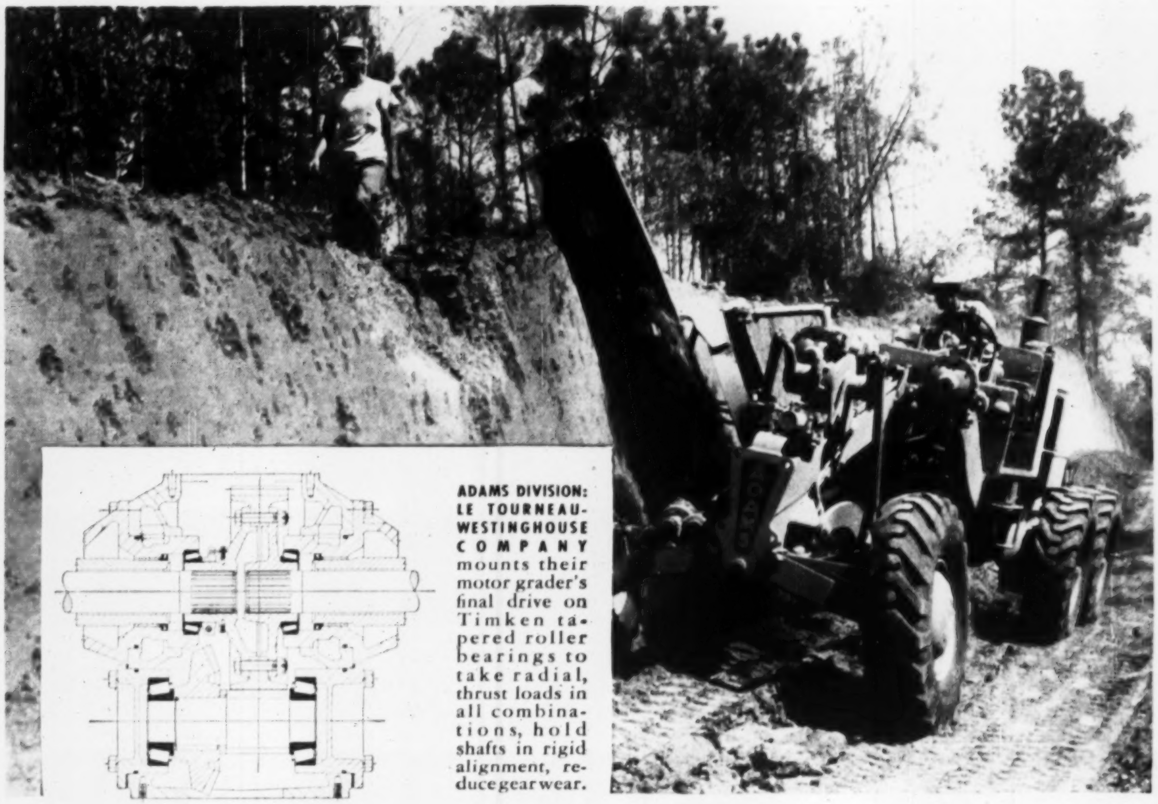

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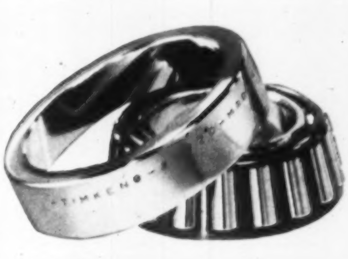

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